

## SECTION VI. PLAN FOR THE FUTURE

### A. LAND USE/DEVELOPMENT GOALS AND IMPLEMENTING ACTIONS

This section of the plan is intended to guide the development and use of land in Camden County. The future land use maps and policies are intended to support Camden County's and CAMA's goals. Specifically, this section includes Camden County's goals, land use development policies, and the future land use maps for the county and the seven individual study areas. The future land use maps and the specified development goals are based on the Camden County community concerns (identified on pages 6 and 7 of this plan) and the future needs/demands (identified in Section V (G) of this plan).

### B. POLICIES/IMPLEMENTING ACTIONS

#### 1. Introduction

It is intended that the policies included in this plan are consistent with the goals of CAMA. This plan will address the CRC management topics for land use plans and comply with all state and federal rules and regulations. The following will serve as a guideline to assist in assuring that this land use plan will guide the development and use of land in a manner that is consistent with the management goal(s), planning objective(s), and land use plan requirements of this plan. These policies/implementing actions will apply in the county as a whole and the individual study areas. All policies/implementing actions shall be used for consistency review by appropriate state and federal agencies.

**Within the village/corridor subareas, the policies and implementing actions included within this plan apply. However, policy P.31 and implementing action I.27 on page 149 specifically address the implementation of "smart growth" actions within the subareas. In addition, the infrastructure carrying capacity policies and implementing actions focus on the subareas (see page 151).**

**Resource conservation and impact analysis issues are addressed throughout the policies and implementing actions included in this plan. However, the following conservation related policies and implementing actions are emphasized:**

- **Public Access, page 139.**
- **Conservation, page 147.**
- **Stormwater Control, page 148.**

- **Natural Hazard Areas, page 155.**
- **Water Quality, page 157.**
- **Cultural, Historical, and Scenic Areas, page 162.**

Specifically, in implementing this plan, the Camden County Planning Board and Board of Commissioners will continually do the following:

- Consult the Land Use Plan during the deliberation of all re-zoning requests.
- Consider the following in deliberation of all zoning petitions:
  - Consider the policies and implementing actions of this plan and all applicable CAMA regulations in their decisions regarding land use and development (including 15A NCAC 7H).
  - All uses that are allowed in a zoning district must be considered. A decision to re-zone or not to re-zone a parcel or parcels of property cannot be based on consideration of only one use or a partial list of the uses allowed within a zoning district.
  - Zoning decisions will not be based on aesthetic considerations.
  - Requests for zoning changes will not be approved if the requested change will result in spot zoning. Spot zoning is a form of discriminatory zoning whose sole purpose is to serve the private interests of one or more landowners instead of furthering the welfare of the entire community as part of an overall zoning plan. Spot zoning is based on the arbitrary and inappropriate nature of a re-zoning change rather than, as is commonly believed, on the size of the area being re-zoned.
  - Zoning which will result in strip development should be discouraged. Strip development is a melange of development, usually commercial, extending along both sides of a major street. Strip development is often a mixture of auto-oriented enterprises (e.g., gas stations, motels, and food stands), and truck-dependent wholesale and light industrial enterprises along with the once-rural homes and farms that await conversion to commercial use. Strip development may severely reduce traffic-carrying capacity of abutting streets by allowing for excessive and conflicting curb cuts.

- The concept of uniformity should be supported in all zoning deliberations. Uniformity is a basic premise of zoning which holds that all land in similar circumstances should be zoned alike; any different circumstances should be carefully balanced with a demonstrated need for such different treatment.
  
- Zoning regulations should be made in accordance with the Camden County Land Use Plan and designed to lessen congestion in the streets; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; and to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements. The regulations shall be made with reasonable consideration, among other things, as to the character of the district and its peculiar suitability for particular uses, and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout Camden County's planning jurisdiction.
  
- Specifically, the Planning Board and Board of Commissioners should ask the following questions:
  - Does Camden County need more land in the zone class requested?
  - Is there other property in the county that might be more appropriate for this use?
  - Is the request in accordance with the Camden County land use plan?
  - Will the request have a serious impact on traffic circulation, parking space, sewer and water services, and other utilities?
  - Will the request have an impact on other county services, including police protection, fire protection, or the school system?
  - Is there a good possibility that the request, as proposed, will result in lessening the enjoyment or use of adjacent properties?
  - Will the request, as proposed, cause serious noise, odors, light, activity, or unusual disturbances?

- Does the request raise serious legal questions such as spot zoning, hardship, violation of precedents, or need for this type of use?
- Does the request adversely impact any CAMA AEC's or other environmentally sensitive areas including water quality?

It is intended that this plan will serve as the basic tool to guide development/growth in Camden County subject to the following:

- The Camden County Land Development Ordinances should be revised from time to time to be consistent, as reasonably possible, with the recommendations of this plan and the evolving nature of the county's growth and development policy.
- Land development regulations should be designed: to lessen congestion in the streets; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; and to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements.
- Camden County will coordinate all development proposals with appropriate State and/or Federal agencies.

## **2. Policies Regarding Land Use and Development in AEC's**

**Camden County accepts state and federal law regarding land uses and development in AEC's.** By reference, all applicable state and federal regulations are incorporated into this document. However, Camden County does not consider the following issues to be relevant at this time:

- Outstanding Resource Waters
- Maritime Forests
- Shellfishing Waters
- Development of Sound and Estuarine System Islands
- Peat or Phosphate Mining's Impact on any Resource
- Dredging
- Beach Nourishment

All policies and implementing actions are to be utilized by the State of North Carolina for consistency review. Note the following:

- No policy is subordinate to another.



- All management topics have equal status.
- The future land use map may show some areas in a developed category which may also include sensitive habitats or natural areas. The intent is that development should be designed/permitted to protect these areas through utilization of concepts such as cluster development. Development/project approval will be based on project design which avoids substantial loss of important habitat areas.
- The village and highway corridor plans are intended to be consistent with the county-wide future land use map.

## C. LAND USE PLAN MANAGEMENT TOPICS

### 1. **Introduction**

The purposes of the Coastal Resources Commission (CRC) management topics are to ensure that CAMA Land Use Plans support the goals of CAMA, to define the CRC's expectations for the land use planning process, and to give the CRC a substantive basis for review and certification of CAMA Land Use Plans. Each of the following management topics (Public Access, Land Use Compatibility, Infrastructure Carrying Capacity, Transportation, Natural Hazard Areas, Water Quality, and Local Areas of Concern) include three components: a management goal, a statement of the CRC's planning objective, and requirements for the CAMA Land Use Plan. These policies apply to the entire county including the seven future land use study areas which are identified on Maps 30 through 36 on pages 188 to 194. The local concerns which should be addressed in this plan are identified on pages 6 and 7. These concerns and issues were utilized to develop the goals and objectives which are included in this plan. Most of the policies and implementing actions are continuing activities. In most situations, specific timelines are not applicable. Refer to page 169 for a list of those policies/implementing actions which have a specific schedule. The policies and implementing actions frequently utilize the following words: should, continue, encourage, enhance, identify, implement, maintain, prevent, promote, protect, provide, strengthen, support, work. The intent of these words is defined in Appendix V. Please note: Policies and Implementing Actions are number consecutively throughout this document with the letter "P" denoting a policy and the letter "I" denoting an implementing action.

### 2. **Impact of CAMA Land Use Plan Policies on Management Topics**

The development of this land use plan has relied heavily on the CAMA-prescribed existing suitability analysis which is included in Section V (E) of this document and the future land suitability analysis which is included in Section V (G)(2)(d) of this document. It is intended that this document is supportive of the CAMA regulations for protection of AEC's (15A NCAC 7H).

This plan is intended to support the Camden County vision statement which was developed based on the key issues identified on pages 6 and 7 of this document and the CAMA AEC regulations. No negative impacts are anticipated by the implementation of the goals, objectives, and policies which are included in this plan. Also refer to Tools for Managing Development, page 200.

Note: It is intended that all policies are consistent with (do not exceed) applicable State and Federal requirements when State and Federal requirements apply.

### **3. Public Access**

- a. Management Goal:* Camden County will maximize public access to the beaches and the public trust waters of the coastal region.
- b. Planning Objective:* Camden County will develop comprehensive policies that provide beach and public trust water access opportunities for the public along the shoreline within the planning jurisdiction.
- c. Land Use Plan Requirements:* The following are Camden County's policies/implementing actions for waterfront access. All policies are continuing activities.

#### **Policies:**

- P.1 The county supports the Great Dismal Swamp Visitor/Welcome Center and tourism and recreational related developments that protect and preserve the natural environment while promoting the county as a tourist destination. It supports the private and public development of waterfront access through private funds and grant monies. It also supports the work of the Northeastern North Carolina Economic Development Commission. *Schedule: Continuing Activity.*
- P.2 Camden County supports providing shoreline access for persons with disabilities. *Schedule: Continuing Activity.*
- P.3 Camden County supports the frequency of shoreline access as defined by 15A NCAC 7M, Section .0300, Shorefront Access Policies. However, emphasis will be placed on providing access to the Great Dismal Swamp and the Shiloh Township area. *Schedule: Continuing Activity.*

- P.4 Camden County supports state/federal funding of piers for crabbing and fishing. *Schedule: Continuing Activity.*
- P.5 Camden County supports the development of estuarine access areas to ensure adequate shoreline access within all areas of the county. Areas that have traditionally been used by the public will be given special attention. *Schedule: Continuing Activity.*

**Implementing Actions:**

- I.1 Camden County will revise its subdivision ordinance to include the provisions of NCGS 153A-331 which allow for requiring the developer of a subdivision to be charged recreation fees as follows: "The subdivision ordinance may provide that a developer may provide funds to the county whereby the county may acquire recreational land or areas to serve the development or subdivision, including the purchase of land which may be used to serve more than one subdivision or development within the immediate area."
- The funds may be utilized to provide increased shoreline access. *Schedule: Fiscal Year 2005-2006.*
- I.2 Camden County will prepare a shoreline access plan and request Division of Coastal Management funding for the preparation of the plan. *Schedule: Fiscal Year 2005-2006.*
- I.3 Camden County will pursue funding under the North Carolina CAMA Shoreline Access funding program (15A NCAC 7M, Section .0300, Shorefront Access Policies). *Schedule: Continuing Activity.*
- I.4 Camden County will pursue private sources of funding for the development of shoreline access facilities, including donation of land. *Schedule: Continuing Activity.*
- I.5 In areas adjacent to the Great Dismal Swamp, Camden County will pursue funding from the Department of Archives and Natural History and the federal government for the provision of shoreline access sites. *Schedule: Continuing Activity.*

- I.6 The county will cooperate with state and federal agencies to secure estuarine access areas to ensure adequate shoreline access within all areas of the county.  
*Schedule: Continuing Activity.*

NOTE: There are no shoreline areas in Camden County targeted for shoreline/beach nourishment.

#### 4. Land Use Compatibility

- a. *Management Goal:* Camden County will ensure that development and use of resources or preservation of land minimize direct and secondary environmental impacts, avoid risks to public health, safety, and welfare, and are consistent with the capability of the land based on considerations of interactions of natural and manmade features.
- b. *Planning Objectives:*
- i. Camden County will adopt and apply local development policies that balance protection of natural resources and fragile areas with economic development.
  - ii. Camden County's policies will provide clear direction to assist local decision making and consistency findings for zoning, divisions of land, and public and private projects.
- c. *Land Use Plan Requirements:* The following are Camden County's policies/implementing actions for land use compatibility:

##### Policies - Residential:

- P.6 Camden County supports revisions to the North Carolina State Statutes which would allow the local imposition of impact fees or special legislation to allow them in Camden County. Impact fees would be levied against land developers to establish a revenue source to support the additional demand for services generated by the people occupying the proposed developments such as roads, schools, water and sewer infrastructure, and recreational facilities. *Schedule: Continuing Activity.*
- P.7 The county supports repair and reconstruction of privately-owned dwelling units through private funds and/or grants. It supports the enforcement of existing regulations of the District Health Department regarding sanitary conditions.  
*Schedule: Continuing Activity.*

- P.8 Camden County supports discouraging the re-zoning of existing residentially-developed or zoned areas to a non-residential classification as reasonably possible. Such re-zoning and amendments in classifications to the future land use map should be carefully balanced with a demonstrated need for such proposed development that will be the best overall land development policy for Camden County's future land use and protecting established residentially-developed areas. *Schedule: Continuing Activity.*
- P.9 Camden County supports greater residential densities in areas that are accessible to water and/or sewer service(s). Agricultural and low density residential land uses should be located in areas that do not have county water or sewer service. Office/Institutional/Multi-family land uses should be developed along transportation thoroughfares to provide transition between commercial nodes and to preserve vehicle carrying capacity. *Schedule: Continuing Activity.*
- P.10 Camden County supports quality development reflecting the spectrum of housing needs, from low-end (affordable) residences to high-end (luxury) residences. *Schedule: Continuing Activity.*
- P.11 Camden County supports regulating growth to coincide with the provision of public facilities and services. *Schedule: Continuing Activity.*
- P.12 The county should discourage development in areas designated for low-density residential/agricultural use with the exception of low-density residential/agriculture land uses as much as reasonably possible. A large majority of the future land use map is designated as low-medium density residential/agricultural land use (see Map 29). Because of its current land use patterns, rezoning and amendments to the future land use map should be carefully balanced with a demonstrated need for such proposed development that will be the overall best management policy for Camden County's future land development. *Schedule: Continuing Activity.*
- P.13 Camden County supports wooded buffers along thoroughfares. *Schedule: Continuing Activity.*
- P.14 Camden County supports utilizing Office/Institutional/Multi-family development as a buffer between light industrial and commercial development and adjacent residential land uses. *Schedule: Continuing Activity.*

- P.15 The county supports providing adequate conservation/open space buffers between areas designated for residential development as indicated on the future land use map and any adjacent non-residential land use, including agricultural areas. *Schedule: Fiscal Year 2005-2006.*
- P.16 The county supports the City of Chesapeake's efforts to develop the 4,000 acre tract of land located along US Route 17, adjacent to the northern Camden County border. The proposed mixed-use development will assist in the county's economic development efforts and provide a source of jobs for county residents. The county may provide utilities to the project site; however, provision of these utilities will be limited due to the existing utility demands of the county. *Schedule: Continuing Activity.*

**Implementing Actions - Residential:**

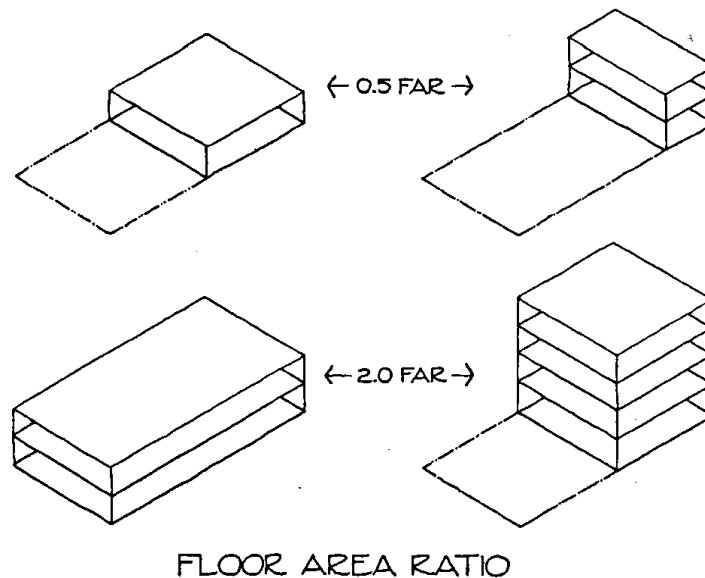
- I.7 All re-zoning and subdivision approvals will consider the existing and future land use suitability maps and analyses which are included in this plan. *Schedule: Continuing Activity.*
- I.8 Camden County will permit residential development to occur in response to market needs provided that the following criteria are met:
- (1) Due respect is offered to all aspects of the environment.
  - (2) If deficient community facilities and services are identified, the county should attempt to improve such to the point of adequately meeting demands.
  - (3) Additional residential development should concurrently involve planning for improvements to community facilities and services if excess capacity does not exist within those facilities and services.
  - (4) Residential development is consistent with other Camden County policies and the land use map as contained in this plan update.

This implementing action will be enforced through the Camden County zoning and subdivision ordinances. *Schedule: Continuing Activity.*

- I.9 Camden County will review its zoning and subdivision ordinances and consider establishing floor area ratio requirements to ensure that development is consistent with the density requirements of this plan. *Schedule: Fiscal Year 2005-2006.*

The following defines floor area ratio: Floor area ratio is determined by dividing the gross floor area of all buildings on a lot by the area of that lot.

*Comment.* The floor area ratio (FAR) was developed as a more refined and adaptable measure of intensity than building coverage. It expresses in one measure, instead of several, the mathematical relation between volume of building and unit of land. However, FAR cannot replace more traditional bulk controls entirely. Often, it is not a sufficient height control nor does it regulate the placement of the building on the site.



- I.10 The county will consider revisions to the zoning ordinance for non-residential sites to ensure adequate buffering and landscaping to separate residential and incompatible non-residential uses, and adequate regulation of off-site lighting, hours of operation, and vehicular driveway locations. *Schedule: Fiscal Year 2005-2006.*
- I.11 The Camden County zoning ordinance will be revised to include an office/institutional zoning district. *Schedule: Fiscal Year 2005-2006.*
- I.12 The county will require through zoning and subdivision regulation an interior road system that provides vehicular access to lots abutting major thoroughfares. Consider reviewing existing design standards to ensure effective limitation of driveway entrances. *Schedule: Continuing Activity.*

- I.13 Camden County, through revision of its zoning ordinance, will limit “strip” residential development along highways and certain roads carrying heavy traffic and encourage service roads or an internal street pattern to eliminate direct driveway connections to highways and roads. *Schedule: Continuing Activity.*
- I.14 The county will regulate through its zoning and subdivision ordinance the development of conflicting land uses along the US 17, US 158, and NC 343 highway corridors. *Schedule: Continuing Activity.*
- I.15 The county will consider the merits of establishing a minimum housing code to ensure that all occupied structures are fit for human habitation. *Schedule: Fiscal Year 2006-2007.*
- I.16 The county will pursue Community Development, North Carolina Housing Finance Agency, and United States Department of Agriculture funds from state and federal sources for rehabilitation or redevelopment of substandard housing. *Schedule: Continuing Activity.*

**Policies - Commercial/Industrial:**

- P.17 Camden County supports commercial development at the intersections of major roads (i.e., in a nodal fashion) consistent with the county’s future land use map (see Map 29). *Schedule: Continuing Activity.*
- P.18 The county supports properly permitted mining activities within its borders. *Schedule: Continuing Activity.*
- P.19 Camden County deems industrial development within fragile areas and areas with low land suitability acceptable only if the following conditions are met:
  - (1) CAMA minor or major permits can be obtained.
  - (2) Applicable zoning ordinance provisions are met in zoned areas.
  - (3) Within coastal wetlands, estuarine waters, and public trust waters, no industrial use will be permitted unless such use is water related.

This policy applies to both new industrial development and to expansion of existing industrial facilities. *Schedule: Continuing Activity.*



- P.20 Camden County opposes the establishment of private solid waste/landfill sites in the county which are not licensed by the county. *Schedule: Continuing Activity.*
- P.21 Camden County supports the recruitment and siting of environmentally compatible light industrial and commercial establishments within its borders in areas that are already similarly developed or in public or private industrial parks to minimize the sacrifice of prime agricultural lands for such development. The county also supports the Northeastern North Carolina Economic Development Commission in its efforts to promote economic development in the county. The county does not encourage the conversion of prime farmland to residential use. *Schedule: Continuing Activity.*
- P.22 Camden County supports industrial development which will be located adjacent to and/or with direct access to major thoroughfares. *Schedule: Continuing Activity.*
- P.23 Camden County supports the development of industrial sites that are accessible to county water and sewer services. *Schedule: Continuing Activity.*
- P.24 Industries which are noxious by reason of the emission of smoke, dust, glare, noise, odor, and vibrations, and those which deal primarily in hazardous products such as explosives, should not be located in Camden County. *Schedule: Continuing Activity.*
- P.25 Industry should be located in conformance with the county's land use plan. This includes placing emphasis on light industrial development. *Schedule: Continuing Activity.*

**Implementing Actions - Commercial/Industrial:**

- I.17 The county will enforce its zoning regulations and rely on state permitting agencies to regulate mining activities. The county will take a more active stance regarding the State permitting authorities and their oversight of mining activities by communicating grievances to the appropriate State agencies and officials. *Schedule: Continuing Activity.*
- I.18 Camden County will rely on its zoning ordinance in zoned areas and the CAMA permitting program with regard to new industrial development and expansion of existing industrial facilities. *Schedule: Continuing Activity.*

- I.19 Camden County will review its zoning and subdivision ordinances to ensure compliance with policies P.17 and P.20 through P.25. *Schedule: Fiscal Year 2005-2006.*

**Policies - Conservation:**

- P.26 Except as otherwise permitted in this plan, residential, commercial, and industrial development should not be supported in natural heritage areas or coastal wetlands. Residential, commercial, and industrial development which meets 15A NCAC 7H use standards will be allowed in estuarine shoreline, estuarine water, and public trust areas. In all other areas, development will be allowed that is consistent with applicable local, state, and federal regulations. *Schedule: Continuing Activity.*
- P.27 Camden County will support larger lots in conservation classified areas through enforcement of the county subdivision and zoning ordinances in zoned areas. *Schedule: Continuing Activity.*
- P.28 Camden County supports the maintenance of its rural atmosphere. *Schedule: Continuing Activity.*

**Implementing Actions - Conservation:**

- I.20 Protect Camden County's fragile areas from inappropriate, unplanned, or poorly planned development through the following:
- By implementing the Camden County Zoning Ordinance, limit land uses in the vicinity of historic sites and natural heritage areas to compatible land uses. *Schedule: Continuing Activity.*
  - Camden County will coordinate all housing code enforcement/redevelopment projects/public works projects with the NC Division of Archives and History to ensure the preservation and identification of significant historic structures and archaeological sites. Significant historic sites are identified on page 77 of this plan. Note: Also see implementing action I.62 and I.63 on page 163. *Schedule: Continuing Activity.*
- I.21 Camden County will review its zoning and subdivision ordinances to ensure compliance with policies P.27 and P.28. *Schedule: Fiscal Year 2005-2006.*

### **Policies - Stormwater Control:**

- P.29 Camden County supports reducing soil erosion, runoff, and sedimentation to minimize the adverse effects on surface and subsurface water quality. *Schedule: Continuing Activity.*
- P.30 The county supports the enforcement of all controls and regulations, specifically design standards, tie-down requirements, construction and installation standards, elevation requirements, flood-proofing, CAMA regulations, and FEMA regulations, deemed necessary by the Board of Commissioners to mitigate the risks of lives and property caused by severe storms and hurricanes. *Schedule: Continuing Activity.*

### **Implementing Actions - Stormwater Control:**

- I.22 Camden County will consider adopting and enforcing a soil erosion and sediment control ordinance. *Schedule: Fiscal Year 2005-2006.*
- I.23 Camden County will support control of agricultural runoff through implementation of Natural Resources Conservation Service “Agricultural Best Management Practices” program (see Appendix IV). *Schedule: Continuing Activity.*
- I.24 Camden County will support control of forestry runoff through implementation of “Forestry Best Management Practices” as provided by the North Carolina Division of Forest Resources (see Appendix III). *Schedule: Continuing Activity.*
- I.25 Camden County will consider adopting a landscaping ordinance to require that a buffer of trees/vegetation be left between rights-of-way and any clear cut areas be consistent with applicable state and federal regulations. *Schedule: Fiscal Year 2005-2006.*
- I.26 Camden County will consider adopting and enforcing a stormwater control ordinance which should include regulations for water detention and/or retention facilities in new developments and provide regulations to control the amount of impervious surface in a development. *Schedule: Fiscal Year 2005-2006.*

NOTE: Please refer to the Storm Hazard Mitigation section of this plan, pages 210 through 229.

**Policies - Community/Highway Corridor Study Areas:**

- P.31 Within the Community/Highway Corridor Study Areas, Camden County supports the concept of “smart growth” as described in Section VI (D) page 170 of this plan. *Schedule: Continuing Activity.*

**Implementing Actions - Community/Highway Corridor Study Areas:**

- I.27 Camden County will review and update its zoning ordinance to incorporate the “smart growth” concept. *Schedule: Fiscal Year 2006-2007.*

**5. Infrastructure Carrying Capacity**

- a. *Management Goal:* Camden County will ensure that public infrastructure systems are appropriately sized, located, and managed so the quality and productivity of AECs and other fragile areas are protected or restored. It is acknowledged that to achieve the infrastructure carrying capacity goals, policies, and implementing actions, some utility lines may have to extend through some environmentally sensitive areas.
- b. *Planning Objective:* Camden County will establish level of service policies and criteria for infrastructure consistent with the projections of future land needs.
- c. *Land Use Plan Requirements:* Please refer to Maps 29 through 37 for delineation of the proposed water and sewer service areas. The following are Camden County’s policies for infrastructure carrying capacity. All policies are continuing activities.

**Policies:**

- P.32 Camden County supports providing adequate community services and facilities which meet the needs of Camden County’s citizens, businesses, and industries. *Schedule: Continuing Activity.*
- P.33 Camden County supports providing sufficient water and sewer service to promote economic development and to alleviate public health problems created by the absence of public water and sewer services in Camden County. *Schedule: Continuing Activity.*
- P.34 The county supports directing more intensive land uses to areas that have existing or planned infrastructure. *Schedule: Continuing Activity.*

- P.35 The county supports the extension of water services from existing systems and encourages the use of central systems for new developments whether residential, commercial, or industrial in nature. It also supports the continued public provision of solid waste disposal, law enforcement, and educational services to all citizens of the county. Note: Also see policy P.79 on page 163. *Schedule: Continuing Activity.*
- P.36 The county will rely on its existing land use and development ordinances to regulate development and may amend or modify regulations to encourage or require the provision of central water service to lots or parcels proposed in new developments. *Schedule: Continuing Activity.*
- P.37 The county supports the installation and use of properly permitted septic tank systems and the enforcement of District Health Department regulations and local development regulations regarding lot sizes and waste disposal system placement. The county will also encourage the North Carolina Department of Environment and Natural Resources to investigate the feasibility of using alternative waste processing systems such as flushless toilets, incineration, and artificial wetlands in areas with severe soil limitations. *Schedule: Continuing Activity.*
- P.38 The county supports the use of properly permitted and maintained package sewage treatment plants within its borders but outside of proposed sewer service areas. Package sewer treatment plants will only be allowed in developments which have been approved by the county. If any package treatment plants are approved, the county supports requirement of a specific contingency plan specifying how ongoing private operation and maintenance of the plant will be provided, and detailing provisions for assumption of the plant into a public system should the private operation fail. *Schedule: Continuing Activity.*
- P.39 The county will support investigations by the District Health Department and North Carolina State University concerning the use of package treatment plants as a method of solving some of the severe sewage disposal problems in several of its communities. *Schedule: Continuing Activity.*
- P.40 Camden County supports providing water and sewer services to identified industrial areas when county resources are sufficient in order to encourage industrial development. *Schedule: Continuing Activity.*

- P.41 In concert with this Land Use Plan, Camden County supports the master water and sewer plan (Growth Management Plan) to guide new industrial development. *Schedule: Continuing Activity.*
- P.42 The County supports the provision of public recreational facilities and areas and will pursue grant funds for recreation facilities. *Schedule: Continuing Activity.*

**Implementing Actions:**

- I.28 Implement the Camden County Growth Management Plan (2000) for water and sewer, and plans for the provision of water and sewer service to the South Mills, Camden, and Shiloh communities (see Maps 29 through 37). *Schedule: Continuing Activity.*
- I.29 Camden County will update the Growth Management Plan. This plan addresses water and sewer needs **and serves as a facility strategy plan and not a formal policy document**. The county will utilize the master water and sewer plan (Growth Management Plan) as a guide to establishing service and funding priorities for developing industrial areas. *Schedule: Fiscal Year 2006-2007.*
- I.30 Camden County will amend the future land use map, when needed, to reflect the county's water and sewer extension projects as they are planned. *Schedule: Continuing Activity.*
- I.31 Camden County will consult the future land use map when considering new public facilities and private development. *Schedule: Continuing Activity.*
- I.32 Camden County will consider revising water and sewer extension policies to ensure that public/private cooperation in the provision of infrastructure to serve new development is encouraged. *Schedule: Fiscal Year 2006-2007.*
- I.33 The county will rely on the Division of Environmental Management to oversee the operation and management of all package treatment plants in the county. *Schedule: Continuing Activity.*
- I.34 The county will consider adopting an operating and capital financing plan for the development of water and sewer systems outside of the proposed water and sewer service areas. *Schedule: Fiscal Year 2007-2008.*

- I.35 Camden County will revise the subdivision ordinance to incorporate provisions to allow for the dedication of public park property and/or open space. This may include a provision for payment in lieu of dedication if approved by the county. *Schedule: Fiscal Year 2005-2006.*
- I.36 Camden County will consider establishing a land banking fund into which the county may annually contribute funds. *Schedule: Fiscal Year 2007-2008.*
- I.37 Provide sufficient emergency management personnel and facilities to adequately serve the projected population growth. *Schedule: Continuing Activity.*
- I.38 The county will coordinate the development of recreational facilities with the school system. *Schedule: Continuing Activity.*

## **6. Transportation**

- a. *Management Goal:* Camden County will achieve safe, efficient, reliable, environmentally-sound, and economically feasible transportation within Camden County.
- b. *Planning Objective:* Camden County will reduce traffic congestion and safety problems.
- c. *Land Use Plan Requirements:*

### **Policies:**

- P.43 Camden County supports interconnected street systems for residential and non-residential development. *Schedule: Continuing Activity.*
- P.44 The county supports limited access from development along all roads and highways to provide safe ingress and egress. *Schedule: Fiscal Year 2005-2006.*
- P.45 Camden County supports subdivision development which utilizes the North Carolina Department of Transportation Traditional Neighborhood Development Street Design Guidelines. A Traditional Neighborhood Development (TND) is a human scale, walkable community with moderate to high residential densities and a mixed use core. Compared with conventional suburban developments, TNDs have a higher potential to increase modal split by encouraging and accommodating alternate transportation modes. TNDs also have a higher potential for capturing internal trips, thus reducing vehicle miles traveled. This should be emphasized in the South Mills, Camden, and Shiloh study areas (see Appendix VI).

A dense network of narrow streets with reduced curb radii is fundamental to TND design. This network serves to both slow and disperse vehicular traffic and provide a pedestrian friendly atmosphere. Such alternate guidelines are encouraged by NCDOT when the overall design ensures that non-vehicular travel is to be afforded every practical accommodation that does not adversely affect safety considerations. The overall function, comfort, and safety of a multi-purpose or “shared” street are more important than its vehicular efficiency alone.

TNDs have a high proportion of interconnected streets, sidewalks, and paths. Streets and rights-of-way are shared between vehicles (moving and parked), bicycles, and pedestrians. The dense network of TND streets functions in an interdependent manner, providing continuous routes that enhance non-vehicular travel. Most TND streets are designed to minimize through traffic by the design of the street and the location of land uses. Streets are designed to only be as wide as needed to accommodate the usual vehicular mix for that street while providing adequate access for moving vans, garbage trucks, fire engines, and school buses.

It is NCDOT’s intent that the development encourage walking and biking, enhance transit service opportunities, and improve traffic safety through promoting low speed, cautious driving, while fully accommodating the needs of pedestrians and bicyclists.

Such developments should have the potential to reduce the number of external vehicle trips, and thus vehicle miles traveled, by 15% or more through provision of commercial, recreational, and other resident-oriented destinations within a walkable community. Traffic impacts, both on-site and off-site, should be minimized. Revise zoning and subdivision ordinances. *Schedule: Fiscal Year 2005-2006.*

- P.46 Camden County specifically supports the following transportation improvement projects:

Project Number	Location	Description
R-2574*	US 158	East of NC 34 at Belcross in Camden County to NC 168 in Currituck County (widen to multiple lanes)
R-2414	US 158 to NC 34	East Of Pasquotank in Elizabeth City to east of NC 34 in Belcross (widen to multiple lanes)
B-4451*	NC 343	Jarvis Creek Replace Bridge No. 21



Project Number	Location	Description
B-4452*	NC 343	Sawyer Creek Replace Bridge No. 20
B-3426*	SR1224	Joyce Creek Replace Bridge No. 2
B-4453*	SR 1235	Creek Replace Bridge No. 19
E-4504	US 17, US 17 Bus., SR 1243 (Mullen Road)	Virginia State Line to Village of South Mills (construct multi-use path)

Refer to Table 53 on page 125 and Map 27 for further detail of TIP projects.  
***Schedule: Continuing Activity.***

- P.47 The county supports maintaining an effective signage and addressing system for all streets, roads, and highways. ***Schedule: Continuing Activity.***
- P.48 The county supports state and federal funding for maintenance/dredging of the Intracoastal Waterway. ***Schedule: Continuing Activity.***

#### **Implementing Actions:**

- I.39 Camden County will require where reasonably possible the utilization of frontage roads in non-residential development along federal and state major highways. ***Schedule: Fiscal Year 2005-2006.***
- I.40 Camden County will establish a requirement for reverse frontage lots within subdivisions to orient lots towards internal subdivision streets, not secondary roads and highways. ***Schedule: Fiscal Year 2005-2006.***
- I.41 Camden County will require the construction of acceleration/deceleration lanes for the entrances to major commercial and residential developments. This should be accomplished through revisions to the county's subdivision ordinance. ***Schedule: Fiscal Year 2005-2006.***
- I.42 Camden County will consider establishing traffic impact studies. ***Schedule: Fiscal Year 2005-2006.***
- I.43 Camden County will consider revising its subdivision ordinance to encourage the development of joint or shared driveways in newly approved subdivisions. ***Schedule: Fiscal Year 2005-2006.***

- I.44 The county will review and update its subdivision ordinance to ensure compliance with policies P.43 through P.48. *Schedule: Fiscal Year 2005-2006.*

## **7. Natural Hazard Areas**

- a. *Management Goal:* Camden County will conserve and maintain shorelines, floodplains, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.
- b. *Planning Objective:* Camden County will develop policies that minimize threats to life, property, and natural resources resulting from development located in or adjacent to hazard areas, such as those subject to erosion, high winds, storm surge, flooding, or sea level rise.
- c. *Land Use Plan Requirements:* The following are Camden County's policies/implementing actions for natural hazard areas. All policies are continuing activities.

### **Policies:**

- P.49 The county supports the enforcement of local controls and the efforts of state and federal agencies with regulatory authority to restrict development within areas up to five feet above mean high water susceptible to sea level rise and wetland loss. *Schedule: Continuing Activity.*
- P.50 The county supports the installation of properly engineered and permitted bulkheads. *Schedule: Continuing Activity.*
- P.51 Camden County supports the US Army Corps of Engineers' regulations and the applicable guidelines of the Coastal Area Management Act and the use of local land use ordinances to regulate development of freshwater swamps, marshes, and 404 wetlands. *Schedule: Continuing Activity.*
- P.52 Camden County supports relocation of structures endangered by erosion, if the relocated structure will be in compliance with all applicable policies and regulations. *Schedule: Continuing Activity.*

- P.53 Camden County recognizes the uncertainties associated with sea level rise. The rate of rise is difficult to predict. Thus, it is difficult to establish policies to deal with the effects of sea level rise. Camden County supports cooperation with local, state, and federal efforts to inform the public of the anticipated effects of sea level rise. *Schedule: Continuing Activity.*
- P.54 Camden County supports hazard mitigation planning. Refer to the hazard mitigation plan section of this document on page 210. *Schedule: Continuing Activity.*
- P.55 Camden County supports the land use densities that are specified on page 199 of this plan. Through enforcement of the zoning ordinance, these densities will minimize damage from natural hazards and support the hazard mitigation plan. *Schedule: Continuing Activity.*

**Implementing Actions:**

- I.45 Camden County will continue to enforce its Floodplain Ordinance and participate in the National Flood Insurance Program. It will rely on the North Carolina Department of Environment and Natural Resources, Division of Coastal Management to monitor and regulate development in areas up to five feet above mean high water susceptible to sea level rise and wetland loss. Subdivision regulations will be enforced – requiring elevation monuments to be set so that floodplain elevations can be more easily determined. *Schedule: Continuing Activity.*
- I.46 The county will monitor development proposals for compliance with Section 404 of the Clean Water Act and will continue to enforce local land use ordinances to regulate development of freshwater swamps, marshes, and 404 wetlands. *Schedule: Continuing Activity.*
- I.47 Camden County permits redevelopment of previously developed areas, provided all applicable policies, regulations, and ordinances are complied with. The county will encourage redevelopment as a means for correcting housing problems, upgrading commercial structures, and historic preservation (through rehabilitation and adaptive reuse). Redevelopment, including infrastructure, should be designed to withstand natural hazards. *Schedule: Continuing Activity.*

- I.48 Camden County will enforce the density controls in the zoning ordinance and subdivision ordinance in redevelopment areas to control growth intensity. *Schedule: Continuing Activity.*
- I.49 In response to possible sea level rise, Camden County will review all local building and land use related ordinances and consider establishing setback standards, density controls, bulkhead restrictions, buffer vegetation protection requirements, and building designs which will facilitate the movement of structures. *Schedule: Continuing Activity.*
- I.50 Camden County will utilize the future land use maps to control development. These maps are coordinated with the land suitability maps and proposed infrastructure maps. *Schedule: Continuing Activity.*

## 8. Water Quality

- a. *Management Goal:* Camden County will maintain, protect, and where possible enhance water quality in all coastal wetlands, rivers, streams, and estuaries. This should include a means of addressing the complex problems of planning for increased development and economic growth while protecting and/or restoring the quality and intended uses of the basin's surface waters.
- b. *Planning Objective:* Camden County will adopt policies for coastal waters within Camden County to help ensure that water quality is maintained if not impaired and improved if impaired.
- c. *Land Use Plan Requirements:* The following provides Camden County's policies/implementing actions on water quality.

### Policies:

- P.56 The county supports the guidelines of the Coastal Area Management Act and the efforts and programs of the North Carolina Department of Environment and Natural Resources, Division of Coastal Management and the Coastal Resources Commission to protect the coastal wetlands, estuarine waters, estuarine shorelines, and public trust waters of Camden County. It also supports the use of best management practices recommendations of the United States Soil Conservation Service for both agricultural and forestry areas. *Schedule: Continuing Activity.*

- P.57 Camden County supports conserving its surficial groundwater resources. *Schedule: Continuing Activity.*
- P.58 The county supports commercial and recreational fishing in its waters and will cooperate with other local governments and state and federal agencies to control pollution of these waters to improve conditions so that commercial and recreational fishing will increase. It also supports the preservation of nursery and habitat areas, particularly the Great Dismal Swamp. *Schedule: Continuing Activity.*
- P.59 The county supports the reforestation of clear cut timber lands and the use of best forestry management practices. *Schedule: Continuing Activity.*
- P.60 Camden County opposes the disposal of any toxic wastes, as defined by the US Environmental Protection Agency's Listing of Hazardous Substances and Priority Pollutants (developed pursuant to the Clean Water Act of 1977), within its planning jurisdiction. *Schedule: Continuing Activity.*
- P.61 Camden County recognizes the value of water quality maintenance to the protection of fragile areas and to the provision of clean water for recreational purposes and supports the control of stormwater runoff to aid in the preservation of water quality. The county will support existing state regulations relating to stormwater runoff resulting from development (Stormwater Disposal Policy 15 NCAC 2H.001-.1003). *Schedule: Continuing Activity.*
- P.62 Camden County supports regulation of underground storage tanks in order to protect its groundwater resources. *Schedule: Continuing Activity.*
- P.63 Camden County supports the policy that all State of North Carolina projects should be designed to limit to the extent possible stormwater runoff into coastal waters. *Schedule: Continuing Activity.*
- P.64 Camden County supports implementation of the Pasquotank River Basin Water Quality Management Plan. *Schedule: Continuing Activity.*
- P.65 The county supports protection of those waters known to be of the highest quality or supporting biological communities of special importance. *Schedule: Continuing Activity.*

- P.66 The county supports management of problem pollutants, particularly biological oxygen demand and nutrients, in order to correct existing water quality problems and to ensure protection of those waters currently supporting their uses. This effort should focus on residential development adjacent to Joyce, Areneuse, and Sawyer's Creeks. *Schedule: Continuing Activity.*
- P.67 Camden County opposes the installation of package treatment plants and septic tanks or discharge of waste in any areas classified as coastal wetlands, freshwater wetlands (404), or natural heritage areas. This policy does not apply to constructed wetlands. *Schedule: Continuing Activity.*
- P.68 Camden County supports the following actions by the General Assembly and the Governor:
- Sufficient state funding should be appropriated to initiate a program of incentives grants to address pollution of our rivers from both point sources and nonpoint sources. *Schedule: Continuing Activity.*
  - An ongoing source of state funding should be developed to provide continuous support for an incentives grant program. *Schedule: Continuing Activity.*
  - The decision-making process for the award of incentives grants should involve river basin organizations representing local governments and other interest groups in the review of all applications for state funding. *Schedule: Continuing Activity.*
  - The ongoing effort of the Department of Environment and Natural Resources to develop administrative rules implementing the Pasquotank River Basin Management Strategy should continue to involve local government officials in the development, review, and refinement of the proposal. *Schedule: Continuing Activity.*
- P.69 Camden County supports all aquaculture activities which meet applicable federal, state, and local policies and permit requirements. However, Camden County reserves the right to comment on all aquaculture activities which require Division of Water Quality permitting. *Schedule: Continuing Activity.*

- P.70 Camden County objects to any discharge of water from aquaculture activities that will degrade in any way the receiving waters. The county objects to withdrawing water from aquifers or surface sources if such withdrawal will endanger water quality or water supply from the aquifers or surface sources. *Schedule: Continuing Activity and to be considered in the Fiscal Year 2005-2006 zoning ordinance update.*
- P.71 Camden County supports only aquaculture activities which do not alter significantly and negatively the natural environment or coastal wetlands, estuarine waters, and public trust areas. *Schedule: Continuing Activity.*
- P.72 Camden County supports the establishment of mooring fields within its planning jurisdiction. However, the county recognizes that improperly regulated mooring fields may result in water degradation. *Schedule: Continuing Activity.*
- P.73 Camden County does not support the location of floating homes within its jurisdiction. *Schedule: Continuing Activity.*

**Implementing Actions:**

- I.51 The county will comply with CAMA and NC Division of Environmental Management stormwater runoff regulations, and by coordinating local development activities involving chemical storage or underground storage tank installation/abandonment with Camden County Emergency Management personnel and the Groundwater Section of the North Carolina Division of Environmental Management. The county will plan for an adequate long-range water supply. In the planning process, Camden County will cooperate with adjacent counties to protect water resources. *Schedule: Continuing Activity.*
- I.52 The county will enforce its zoning and subdivision regulations to aid in protecting sensitive shoreline areas. It will rely on state and federal agencies to promote and protect the Great Dismal Swamp, as well as other nursery and habitat areas. *Schedule: Continuing Activity.*
- I.53 The county will review and amend the local zoning ordinance with regard to underground chemical and gasoline storage regulations to ensure a minimum of risk to local groundwater resources. This will include revisions to the county's zoning ordinance to establish a heavy industrial district and only allow large chemical/fuel storage facilities in the heavy industrial district. *Schedule: Fiscal Year 2005-2006.*

- I.54 Camden County will rely on the technical requirements and state program approval for underground storage tanks (40 CFR, Parts 280 and 281), and any subsequent state regulations concerning underground storage tanks adopted during the planning period. *Schedule: Continuing Activity.*
- I.55 Camden County will continuously enforce, through the development and zoning permit process, all current regulations of the NC State Building Code and North Carolina Division of Health Services relating to building construction and septic tank installation/replacement in areas with soils restrictions. *Schedule: Continuing Activity.*
- I.56 Camden County will implement the following actions through local ordinances to improve water quality (Note: these actions are especially significant in areas adjacent to Areneuse, Sawyer's, and Joyce Creeks):
- Use watershed-based land use planning
  - Protect sensitive natural areas, including coastal wetlands
  - Establish buffer network
  - Minimize impervious cover in site design
  - Limit erosion during construction
  - Maintain coastal growth measures
  - Restoration of impaired waters
  - Management of the cause and sources of pollution to ensure the protection of those waters currently supporting their uses allowing for reasonable economic growth.
  - Reduction of nutrients in Camden County waters. *Schedule: Review local ordinances annually.*
- I.57 Preservation of wetlands is important to the protection/improvement of water quality in Camden County. The following will be implemented:
- Consider preservation of large wetland areas (> one acre) in a natural state to protect their environmental value. *Schedule: Continuing Activity.*
  - Coordinate all development review with the appropriate office of the US Army Corps of Engineers and the Soil Conservation Service. *Schedule: Continuing Activity.*



- Require that wetland areas be surveyed and delineated on all preliminary and final subdivision plats. *Schedule: Fiscal Year 2005-2006.*
- Encourage cluster development in order to protect sensitive natural areas. *Schedule: Fiscal Year 2005-2006, revised zoning and subdivision ordinances.*
- Make wetlands acquisition a priority in future expansions of Camden County parks and recreation areas. *Schedule: Continuing Activity.*

I.58 Camden County will revise its zoning ordinance to regulate the location of aquaculture activities. *Schedule: Fiscal Year 2005-2006.*

I.59 Camden County will develop a local ordinance and a waterfront development plan to regulate the development of mooring fields. *Schedule: Fiscal Year 2005-2006.*

## 9. Local Areas of Concern

- a. *Management Goal:* Camden County will integrate local concerns with the overall goals of CAMA in the context of land use planning.
- b. *Planning Objective:* Camden County will identify and address local concerns and issues, such as cultural and historic areas, scenic areas, economic development, or general health and human services needs.
- c. *Land Use Plan Requirements:* The following provides Camden County's policies/implementing actions on local areas of concern. All policies are continuing activities.

### Policies - Cultural, Historic, and Scenic Areas:

P.74 The county supports local, state, and federal efforts to protect historic properties within its borders and to perpetuate its cultural heritage. Sites of historic significance are identified on page 77. *Schedule: Continuing Activity.*

P.75 Camden County supports protection and preservation of the Great Dismal Swamp which has both historic and environmental significance. *Schedule: Continuing Activity.*

### **Implementing Actions - Cultural, Historic, and Scenic Areas:**

- I.60 Camden County will guide development so as to protect historic and potentially historic properties in the county and to perpetuate the county's cultural heritage. *Schedule: Continuing Activity.*
- I.61 Camden County will encourage a county-wide survey of historical sites by local volunteers or state and federal agencies and will seek grant monies within the next two years for the complete inventory of historically significant structures and sites. *Schedule: Continuing Activity.*
- I.62 Camden County shall coordinate all housing code enforcement/redevelopment projects with the NC Division of Archives and History, to ensure that any significant architectural details or buildings are identified and preserved. *Schedule: Continuing Activity.*
- I.63 Camden County will coordinate all county public works projects with the NC Division of Archives and History, to ensure the identification and preservation of significant archaeological sites. *Schedule: Continuing Activity.*

### **Policies - Economic Development:**

- P.76 Tourism is important to Camden County and will be supported by the county. *Schedule: Continuing Activity.*
- P.77 The county will encourage development in Camden County to protect the county's resources, preserve its rural atmosphere, and simultaneously promote industrial and retail growth. *Schedule: Continuing Activity.*
- P.78 The county will encourage industrial and commercial development in areas with existing infrastructure that does not infringe on existing medium density residential areas. *Schedule: Continuing Activity.*
- P.79 Camden County supports the extension of water services from existing systems and encourages the use of central systems for new developments whether residential, commercial, or industrial in nature (see policy P.35). *Schedule: Continuing Activity.*

- P.80 The county supports the location of staging areas and support facilities for energy related activities – particularly exploration. *Schedule: Continuing Activity.*

**Implementing Actions - Economic Development:**

- I.64 Camden County will continue to support the activities of the North Carolina Division of Travel and Tourism; specifically, the monitoring of tourism-related industry, efforts to promote tourism-related commercial activity, and efforts to enhance and provide shoreline resources. *Schedule: Continuing Activity.*
- I.65 Camden County will continue to support the activities of the Camden County Department of Tourism. *Schedule: Continuing Activity.*
- I.66 Camden County will support projects that will increase public access to shoreline areas. *Schedule: Continuing Activity.*
- I.67 Camden County will support North Carolina Department of Transportation projects to improve access to and within the county. *Schedule: Continuing Activity.*
- I.68 Camden County will support the following in the pursuit of industrial development:
- Encourage placement of new heavy industrial development to have minimum adverse effect on the county's ecosystem and by encouraging areas of concentrations of such uses be considered first when suitable infrastructure is available consistent with the growth policy of the future land development map. *Schedule: Continuing Activity.*
  - Re-zone additional parcels for industrial and commercial use along existing growth corridors with adequate infrastructure existing or planned and, when the need is demonstrated, provide a consistent growth policy with amendments to the future land development map when revision is needed. This will accommodate the future demand for additional industrial and commercial development in suitable areas. *Schedule: Continuing Activity.*
  - Encourage industrial development in industrial park sites by improving the provision of services such as water, sewer, and natural gas. *Schedule: Continuing Activity.*

- I.69 Camden County will continue to maintain the Industrial Development Committee and seek grant monies to encourage and promote economic and industrial development. *Schedule: Continuing Activity.*

**Policies - General Health and Human Services Needs:**

- P.81 Camden County supports the continued public provision of solid waste disposal, law enforcement, and educational services to all citizens of the county. *Schedule: Continuing Activity.*
- P.82 The county supports strengthening legislation to regulate off-road vehicle usage on private property. *Schedule: Continuing Activity.*
- P.83 Camden County opposes the establishment of military outlying landing fields (OLFs). *Schedule: Continuing Activity.*
- P.84 The county supports local, state, and federal efforts to minimize the adverse impact of man-made hazards within its borders. Camden County will utilize its development controls and will rely on state and federal agencies with jurisdiction to minimize the impact of man-made hazards. *Schedule: Continuing Activity.*
- P.85 In an effort to improve health conditions, Camden County supports the following water and sewer policies:
- Camden County supports the extension of central water service into all areas of the county shown on the future land suitability analysis map as suitable for development, including the construction of lines to and through conservation areas to serve development which meets all applicable state and federal regulations. *Schedule: Continuing Activity.*
  - The county is aware that inappropriate land uses near well fields increase the possibility of well contamination. Land uses near groundwater sources are regulated by the North Carolina Division of Environmental Management through NCAC Subchapter 2L and Subchapter 2C. Camden County recognizes the importance of protecting potable water supplies, and therefore supports the enforcement of these regulations. *Schedule: Continuing Activity.*

- Camden County supports all efforts to secure available state and federal funding for the construction and/or expansion of public and private water/sewer systems. *Schedule: Continuing Activity.*
- Camden County supports the construction of water systems with adequate line sizes to ensure adequate water pressure and fire protection. *Schedule: Continuing Activity.*
- Camden County will continue to provide water services to county residents and will continue the process of studying the role of county government in providing sewage treatment facilities for rapidly growing areas of the county, including the construction of lines to and through conservation areas to serve development which meets all applicable state and federal regulations. The county will secure federal and state grants, when feasible, to help carry out this policy. *Schedule: Continuing Activity.*

#### **Implementing Actions - General Health and Human Services Needs:**

- I.70 The county will investigate, with the Institute of Government, the use of impact fees as a way of making new development pay for the services demanded. *Schedule: Fiscal Year 2006-2007.*
- I.71 The county will seek educational grants to subsidize continuing education at nearby colleges and universities and support community education programs. *Schedule: Continuing Activity.*
- I.72 Camden County officials are aware that a clean community projects a positive image for industry, new businesses, and visitors to the area and will continue to support the efforts of the Clean County Department. Complementing and supporting the primary goal of reducing litter and preserving and protecting natural resources, the Committee will address other community issues to include, but not be limited to, those listed below:
  - The Clean County Department staff will work with schools, business and industry, civic clubs, governments, and the media to provide comprehensive involvement of the community in the Keep America Beautiful System. *Schedule: Continuing Activity.*

- The Department and staff will continue to educate the public regarding alternatives to landfilling solid waste, with an educational focus on recycling and the problems and damages to the environment caused by illegal dumping. *Schedule: Continuing Activity.*
  - The county will continue assisting with beautification of county container sites. Clean-up work at container sites will continue with the availability of court assigned community service workers. *Schedule: Continuing Activity.*
- I.73 Floodplain regulation is a concern in Camden County. To accomplish protection of public health and service needs, Camden County will:
- Continue to enforce the flood hazard reduction provisions of the Camden County Land Development Ordinances. *Schedule: Continuing Activity.*
  - Prohibit the installation of underground storage tanks in the 100-year floodplain. *Schedule: Continuing Activity.*
  - Zone for open space, recreational, agricultural, or other low-intensity uses within the floodplain. *Schedule: Continuing Activity.*
  - Prohibit the development of any industry within the 100-year floodplain that may pose a risk to public health and safety. Such industries may include but not be limited to: chemical refining and processing, petroleum refining and processing, hazardous material processing, or storage facilities. *Schedule: Continuing Activity.*
- I.74 To effectively manage Camden County's investment in existing and proposed community facilities and services, the county will:
- Develop a specific capital improvements plan (CIP) with emphasis placed on services and facilities which affect growth and development (see implementing action I.34 on page 151). *Schedule: Fiscal Year 2006-2007.*
  - Provide the Camden County Board of Education with locational information on all residential development. *Schedule: Continuing Activity.*

- In concert with the Camden County Board of Education, develop a plan for the protection of future school sites. *Schedule: Fiscal Year 2006-2007.*
- 1.75 Camden County will provide sufficient emergency services to all residents. The county will implement the following:
- Require that all necessary infrastructure firefighting capability/capacity be provided in new subdivisions and developments. *Schedule: Continuing Activity.*
  - Continue to maintain an effective signage and addressing system for all streets, roads, and highways. *Schedule: Continuing Activity.*
- 1.76 Camden County will adopt a management plan for the proposed Camden County Landfill. That plan will address the associated land use issues identified on page 132. *Schedule: FY2006-2007.*

**Implementing Actions - Funding Options:**

- 1.77 Camden County will continue to support state and federal programs that are deemed necessary, cost-effective, and within the administrative and fiscal capabilities of Camden County. *Schedule: Continuing Activity.* These include:
- Community Development Block Grant Program
  - Area Agency on Aging
  - Emergency Medical Services
  - JTPA Work Program
  - Farmer's Home House Preservation Program
  - Coastal Area Management Act, including shoreline access funds
  - Small Business Association
  - Economic Development Administration Funds
  - Farmer's Home Administration – Federal Grant Program
  - Federal Emergency Management Program
  - Aid to Families with Dependent Children
  - MEDICAID
  - Day Care
  - Crisis Intervention

- I.78 Camden County will selectively support state and federal programs related to Camden County. The county, through its boards, commissions, and committees, will monitor state and federal programs and regulations. It will use opportunities as they are presented to voice support for or to disagree with programs and regulations that are proposed by state and federal agencies. *Schedule: Continuing Activity.*
- I.79 Camden County officials will continue to work with the Army Corps of Engineers and any other state and federal agencies to ensure continued dredging and maintenance of channels and rivers as needed to keep these facilities open to navigation. These efforts shall comply with applicable state and federal regulations. Providing borrow or spoil areas and provision of easements for work will be determined on case-by-case basis. The county would encourage spoil material being placed on those areas where easements for such use already exist. Channel maintenance has major economic significance and is worthy of state and federal funding. *Schedule: Continuing Activity.*

## 10. Schedule

The policies and implementing actions which have specific time frames are summarized below; policies and implementing actions which are shown as continuing activities are not listed.

### Fiscal Year 2005-2006

P.15, P.44, P.45, P.70, I.1, I.2, I.9, I.10, I.11, I.19, I.21, I.22, I.25, I.26, I.35, I.39, I.40, I.41, I.42, I.43, I.44, I.53, I.57, I.58, I.59

### Fiscal Year 2006-2007

I.15, I.27, I.29, I.32, I.70, I.74, I.76

### Fiscal Year 2007-2008

I.34, I.36



#### D. FUTURE LAND USE COMMUNITY/HIGHWAY CORRIDOR AREAS

The growth pressure in Camden County is expected to primarily occur in the seven identified community/highway corridor areas. The key issues confronting Camden County were identified on page 6 and 7 of this plan. However, the top four key issues or future needs should be repeated in this section of the plan. These include:

- Improve infrastructure.
- Control growth.
- Provide better opportunities in education.
- Improve subdivision development.

Future educational facilities and opportunities will be discussed in a later section of this plan. There are a number of development issues/guidelines which should be discussed in this section of the plan. Smart growth principles will be incorporated in proposed revisions to the Camden County Zoning and Subdivision Ordinances.

In each of the seven community/highway corridor study areas, Camden County should incorporate the concept of “smart growth” into its future planning. In reality, this concept is not a new idea. It is simply the blending of many existing ideas. The policies and implementing actions contained in this plan are intended to be supportive of smart growth. Smart growth adheres to six basic principles which are described as follows:

*Principle 1 - Efficient Use of Land Resources:* Smart growth supports the preservation of land and natural resources. These benefits result from compact building forms, in-fill development, and moderation in street and parking standards. Compact building patterns preserve land for town and neighborhood parks as well as local woods and wetlands. Furthermore, compact development shortens trips, lessening dependence on the automobile, and therefore reducing levels of energy consumption and air pollution. Finally, a compact development pattern supports more cost-effective infrastructure than does low-density fringe development.

*Principle 2 - Full Use of Urban Services:* The same frugality of land development supports efficient use of public and private infrastructure. Smart growth means creating neighborhoods where more people will use existing services like water lines and sewers, roads, emergency services, and schools. Inefficient land use, whether within or outside urban areas, places a financial strain on communities trying to provide for the construction and maintenance of infrastructure needs.

Building compactly does not mean that all areas must be densely developed. Rather, the goal is an average density for the area, at a level that makes full use of urban services. Averaging allows for areas to have a mix of low-, medium-, and high-density development. Mixing densities to encourage efficient use of services also means requiring a high level of building and siting compatibility, encouraging neighborhoods to have both character and privacy.

Careful street sizing and the accommodation of some parking on streets reduces impervious surfaces and efficiently uses urban services by saving on land acquisition, construction, and maintenance costs. In short, streets should be sized for their use: lower density areas that have little through traffic are best served by slower, narrower streets, while transportation corridors that move district-wide traffic need wider travelways.

*Principle 3 - Mix of Uses:* Locating stores, offices, residences, schools, and recreation spaces within walking distance of each other in compact neighborhoods with pedestrian-oriented streets promotes:

- independence of movement, especially for the young and the elderly who can conveniently walk, cycle, or ride transit;
- safety in commercial areas, through around-the-clock presence of people;
- reduction in auto use, especially for shorter trips;
- support for those who work at home, through nearby services and parks; and
- a variety of housing choices, so that the young and old, singles and families, and those of varying economic ability may find places to live.

Mixed-use examples include a corner store in a residential area, an apartment near or over a shop, and a lunch counter in an industrial zone. Most codes prohibit the co-location of any residential and commercial buildings. This prohibition is based on the functional and architectural incompatibility of the buildings. Using design standards, in tandem with mixed-use zoning, overcomes incompatibility. Additionally, limitations on commercial functions, such as hours of operation and delivery truck access, may be necessary. More fundamentally, to gain the full benefits of a mix of uses, buildings must be conveniently connected by streets and paths. Otherwise, people will still be inclined or required to use cars, even for the shortest trips.

*Principle 4 - Transportation Options:* Transportation must be safe, convenient, and interesting. These performance factors affect sidewalk and street design, placement of parking, and location of building fronts, doors, and windows. Well-designed bike lanes and sidewalks protect people from vehicle accidents. Orienting windows and doorways to the sidewalk increases awareness of street activity and the safety of the streetscape.

Convenience begins with a connected network of streets that provides alternative routes with reasonable walking distances between destinations. A properly designed network also promotes neighborhood safety by routing the heaviest traffic around neighborhoods, without sacrificing street connectivity.

Providing compact, mixed-use development connected by safe, convenient, and interesting networks of streets and paths promotes:

- walking, cycling, and transit as viable, attractive alternatives to driving;
- less traffic congestion and air pollution;
- the convenience, density, and variety of uses necessary to support transit;
- a variety of alternative routes, thereby dispersing traffic congestion; and
- lower traffic speeds, making neighborhoods safer.

*Principle 5 - Detailed, Human-Scale Design:* Community acceptance of compact, mixed-use development requires compatibility between buildings to ensure privacy, safety, and visual coherency. Similar massing of buildings, orientation of buildings to the street, the presence of windows, doors, porches, and other architectural elements, and effective use of landscaping all contribute to successful compatibility between diverse building types.

Human-scale design is also critical to the success of streets and paths as preferred routes for pedestrians, cyclists, and motorists alike. In general, smart street design considers the role of pedestrians along with that of vehicular traffic, emphasizing the quality of the walking environment. For instance, parallel parking may be considered a hindrance to vehicle flow, but, for pedestrians and shop owners, on-street parking is a benefit because it reduces speeding traffic and protects the sidewalks.

Designing streets that are balanced for pedestrians, cyclists, and motorists promotes the development of community through the informal meeting of neighbors. Neighborhood safety is improved, since neighbors can more easily come to know one another and watch over each other's homes.

*Principle 6 - Development Review:* Camden County's ability to adopt smart growth principles will, of necessity, require an examination of its development review process. Primarily, the review should focus on ways that the review process can be streamlined so that developers are encouraged to apply the principles. Frustrating, costly, and time-consuming delays due, in part, to inflexible standards, regulations, and processes will discourage innovative approaches to development and design. Providing for flexibility and certainty in the application of standards, including provision

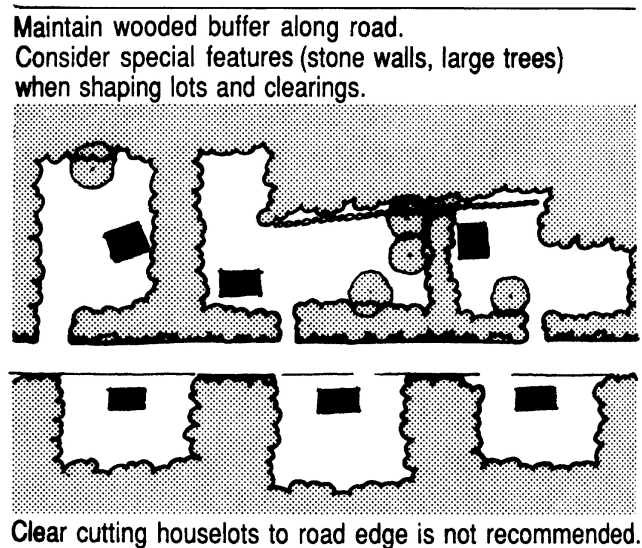
for performance standards and administrative approval of “minor” variances, can help promote creative development that complies with the principles. Effective use of Planned Unit Developments (PUD’s) can also relieve some of the regulatory barriers for developers and lighten the administrative load for planners, as can adopting a flexible process for applying design review standards.

While the smart growth concept may not be suited to every community, it will support Camden County’s objective of preserving its natural resources by encouraging the development of neighborhoods and communities that may be “self sustaining.”

The following provides examples of some of the development concepts associated with smart growth:

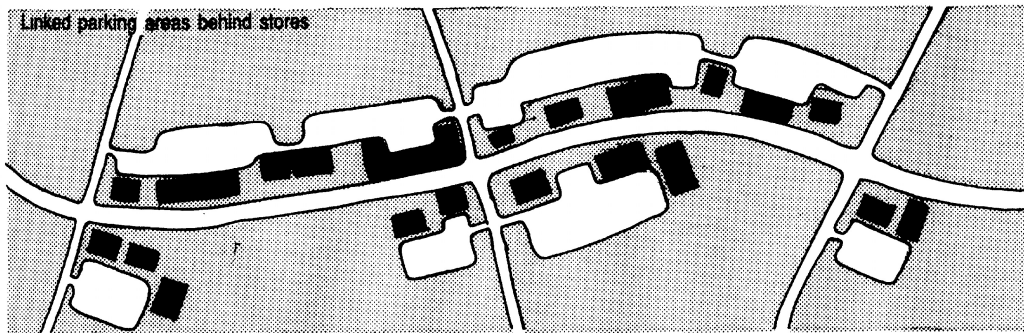
- Preserve Camden County’s open space and agricultural areas, historically significant structures, landmarks, and other features which reflect its heritage.

**Figure 1:** Simple site planning techniques for protecting the scenic character of rural roads include maintaining (or establishing) a wooded no-cut buffer along the front lot line and angling driveways so that lawns, houses, and garages are not directly visible from the road. Combined with deep front setbacks for construction, such approaches could become design requirements in a scenic roads overlay zone. Where such principles remain guidelines rather than enforceable standards, conventional clearing and siting patterns can be expected to continue, as illustrated in the bottom half of this sketch.

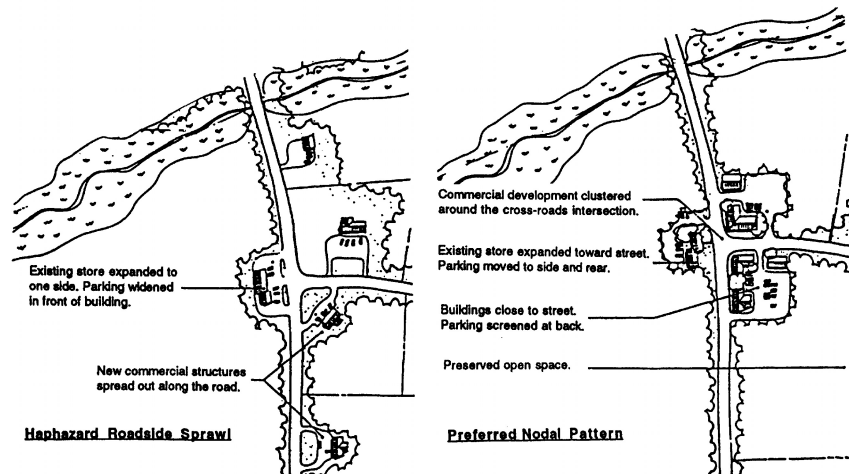


- Discourage strip commercial development on major collector roads that allow each lot to have direct vehicular access to the highway.

**Figure 2:** Connecting rear parking lots allows customers to drive to many other shops in the corridor without re-entering the highway and interrupting traffic flow. Such arrangements can be required for new development, expansion of existing buildings, and redevelopment.

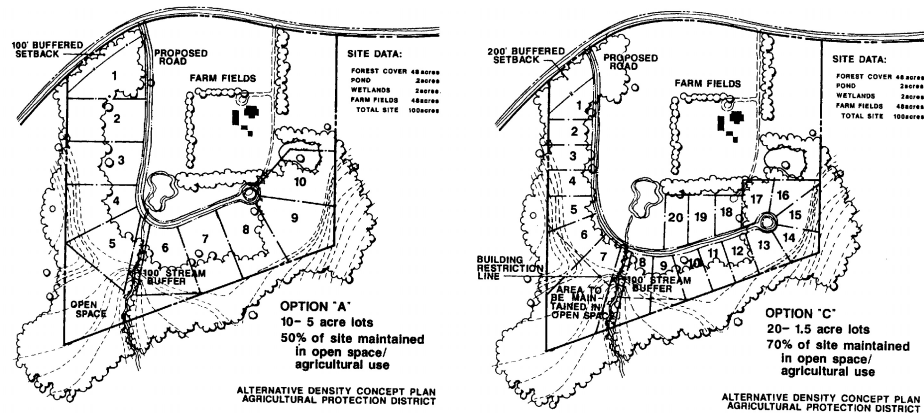


**Figure 3:** Two alternatives for arranging commercial development along a rural highway: strip versus nodes. Within the node, stores are located toward the front of their lots, with interconnected rear parking provision.

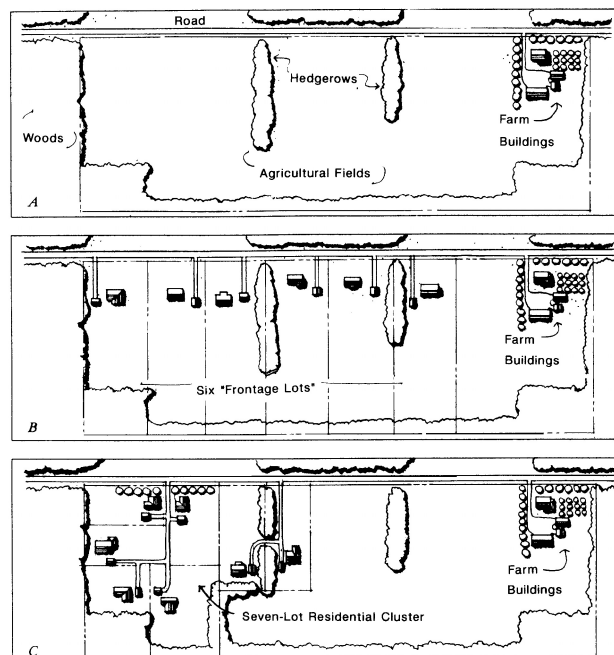


- Encourage and preserve agricultural and forestland to protect the future of farming in Camden County.

**Figure 4:** Two of the nation's first county-wide zoning regulations requiring developers to employ "open space design" techniques were adopted by Isle of Wight County, Virginia. These sketches illustrate two options under the new ordinance, where development density is limited to one dwelling per ten acres: preserving 50 percent of a 100-acre farm with 10 five-acre lots, or preserving 70 percent open space with 20 lots of 1.5 acres each. Source: Redman-Johnston Associates, Easton, Maryland.

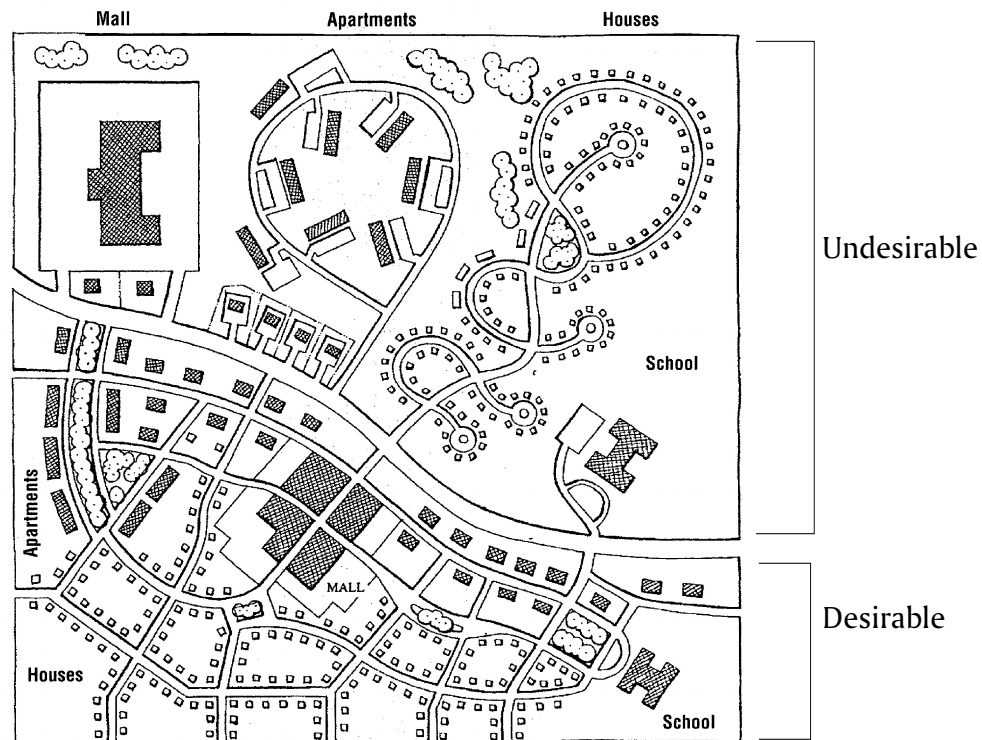


**Figure 5:** On unwooded sites, such as open fields or pastures, it is even more important to encourage (or require) clustering of new development. Even on relatively shallow sites, where there is little opportunity to locate homes far from the road, such as against a distant treeline, clustering principles can help reduce roadside clutter and preserve some open vistas. These three sketches, from *Managing Change: A Pilot Study in Rural Design and Planning* (Doble, et al., 1992) show techniques being advocated by the Tug Hill Commission in upstate New York, where the cost of constructing paved subdivision streets operates as a strong disincentive for rural landowners to subdivide their property in any way other than through "strip lots" along existing public roads. This example shows several gravel-surfaced shared driveways, built to standards appropriate for the amount of traffic they must accommodate.



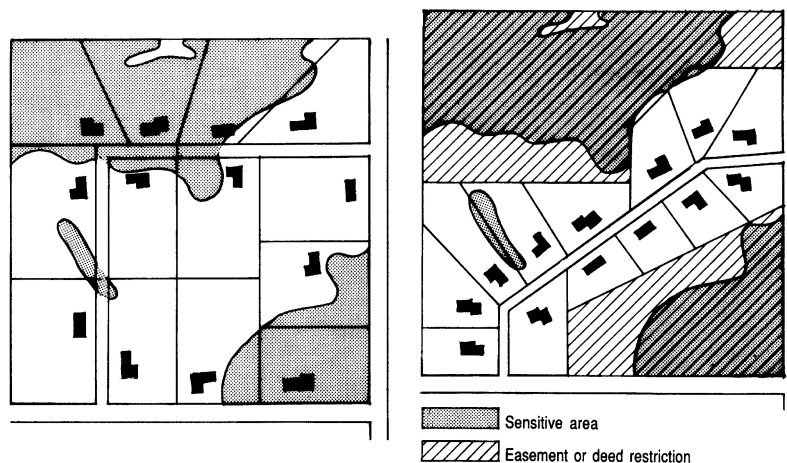
- Reduce traffic congestion and safety problems.

**Figure 6:** Conventional development with poor connectivity: travel requires use of the collector streets, causing congestion and discouraging pedestrians and cyclist (top). Smart growth with interconnected street system, allowing a variety of transportation options and shorter trips (bottom).

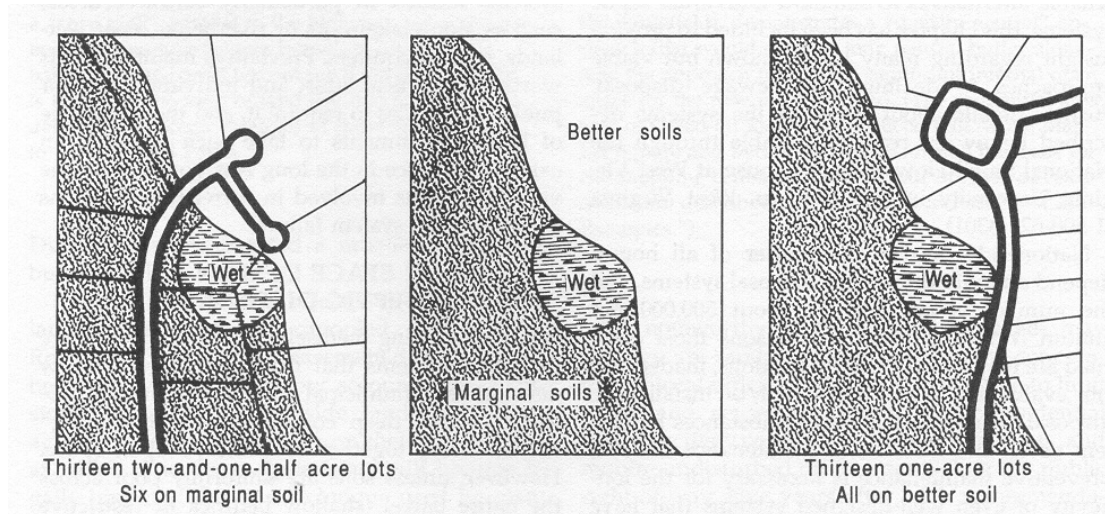


- Preserve large wetland areas (> one acre) in a natural state to protect their environmental value.

**Figure 7:** Conventional two-acre lot subdivision with homes located on sensitive but buildable land, compared with improved layouts protecting those resource areas, as encouraged by new regulations adopted by the Maine Department of Environmental Protection.



**Figure 8:** Reducing lot size can sometimes help subdivision designers locate all homes on the better soils contained within a development site. On the left, some of the thirteen 2.5-acre lots would have septic systems on marginal soils, barely meeting minimum legal requirements, because these lots contain nothing better. By decreasing lots to one acre in size, all thirteen can be laid out to contain deeper, drier soils (with all wetlands in the open space preservation area, a treed island at the end of the street, and a future street and/or trail connection to adjoining properties). Sometimes such arrangements require a few “flag lots” with a relatively narrow strip of land providing driveway access, a very useful design approach that should generally be allowed, subject to certain safeguards to prevent abuses (such as the infamous “rat-tail” subdivisions with numerous lots having long, snake-like appendages connecting the lots to a distant public road—all to avoid the cost of providing internal streets).



## E. FUTURE LAND USE MAPS

### 1. Introduction

The future land use maps depict application of the policies for growth and development, the desired future patterns of land use and land development, and future water and sewer service areas with consideration given to natural system constraints and infrastructure policies. The future land use maps must include the following:

- 14-digit hydrological units encompassed by the planning area.
- Areas and locations planned for conservation or open space and a description of compatible land uses and activities.



- Areas and locations planned for future growth and development with descriptions of the following characteristics:
  - Predominant and supporting land uses that are encouraged in each area;
  - Overall density and development intensity planned for each area; and
  - Infrastructure required to support planned development in each area.
- Areas in existing developed areas for infill, preservation, and redevelopment.
- Existing and planned infrastructure, including major roads, water, and sewer.
- Reflect the information depicted on the Composite Map of Environmental Conditions (Map 10), Map of Existing Land Suitability Analysis (Map 23), and Map of Future Land Suitability Analysis (Map 26).

## 2. Future Land Use Acreages

In-fill development will be limited to the South Mills, Shiloh, and Camden communities. The county believes that the future land use maps and associated goals and implementing actions are consistent with the land suitability analysis. Table 54 provides a summary of the estimated future land use acreages, Table 55 and 56 provides a summary of the estimated future land use acreages by subbasin, and Table 57 provides a comparison of the future and existing land use acreages.

Please note: Tables 54 through 57 summarize existing and future land use acreages. These tables reflect future decreases in some future land use categories as a result of reflecting data shown on Maps 10, 23, and 26. Based on these maps, some areas are committed to the conservation categories on the future land use maps. The future land use plan map depicts areas for development which are geographically consistent with medium suitability and high suitability areas depicted on the existing land suitability map (Map 23, page 105).

All future land use acreages are based on suitability of land for development and not forecast market demand for future acreages. Table 58 starting on page 183 provides future acreage demand based on market growth.

Table 54  
Camden County and Study Areas  
Future Land Use Acreages

LAND USE	County Minus Study Areas	STUDY AREAS							Entire County
		South Mills Community	Camden Community	Shiloh Community	Highway 343 Corridor South	Highway 343 Corridor North	Highway 17 Corridor	Highway 158 Corridor	
Moderate Density Residential	1,936.83	443.20	204.42	163.40	1,115.76	0.00	0.00	26.87	3,890.48
Low Density Residential/ Agricultural	21,003.27	1,385.88	730.56	1,167.64	6,934.23	1,751.00	4,655.53	0.00	37,628.11
Planned Unit Development/Mixed Use	0.00	175.02	0.00	0.00	0.00	0.00	0.00	0.00	175.02
Commercial	94.71	80.74	69.22	0.00	13.40	0.00	45.71	0.00	303.78
Community Core	6.88	40.10	209.68	17.98	35.84	0.00	0.00	0.00	310.48
Industrial	1,289.62	10.91	247.18	0.00	0.00	0.00	452.66	116.90	2,117.27
Conservation	101,145.45	624.25	392.94	314.01	1,471.51	328.55	1,784.93	70.99	106,132.63
Total	125,476.76	2,760.10	1,854.00	1,663.03	9,570.74	2,079.55	6,938.83	214.76	150,557.77

NOTE: All study areas fall into subbasin 03-10-50 with the exception of Highway 343 Corridor South and Highway 158 Corridor. The Highway 343 Corridor South has 77% in subbasin 03-10-50 and 23% in subbasin 03-10-54. The Highway 158 Corridor has 30% in subbasin 03-10-50 and 70% in subbasin 03-10-54.

Source: Holland Consulting Planners, Inc.

Table 55  
 SUBBASIN 03-01-50 ACREAGE  
 (Percentage of county in subbasin -- 74.3%)

Land Use	Acreage by Land Use	% of Total Acreage
Moderate Density Residential	2,480	2.22%
Low Density Residential/Agricultural	31,589	28.23%
Planned Unit Development/Mixed Use	175	0.16%
Commercial	299	0.27%
Community Core	275	0.25%
Industrial	1,647	1.47%
Conservation	75,415	67.40%
Total	111,880	100.00%

Source: Holland Consulting Planners, Inc. (April, 2003).

Table 56  
 SUBBASIN 03-01-54 ACREAGE  
 (Percentage of county in subbasin -- 25.7%)

Land Use	Acreage by Land Use	% of Total Acreage
Moderate Density Residential	1,408	3.64%
Low Density Residential/Agricultural	6,040	15.62%
Planned Unit Development/Mixed Use	0	0.00%
Commercial	5	0.01%
Community Core	36	0.09%
Industrial	447	1.16%
Conservation	30,741	79.48%
Total	38,677	100.00%

Source: Holland Consulting Planners, Inc. (April, 2003).

Table 57  
Camden County and Study Areas  
Existing vs. Future Land Use Acreages

South Mills Community			
Land Use	Existing Land Use	Future Land Use	% Change
Low Density Residential	2,447	1,386	-43.36%
Medium Density Residential	261	618	+ 136.78%
Commercial	52	121	+ 132.69%
Industrial	0	11	0.00%
Conservation/Recreational	0	624	0.00%
Total	2,760	2,760	

Camden Community			
Land Use	Existing Land Use	Future Land Use	% Change
Low Density Residential	1,491	731	-50.97%
Medium Density Residential	143	204	+ 42.66%
Commercial	173	279	+ 61.27%
Industrial	0	247	0.00%
Conservation/Recreational	47	393	+ 736.17%
Total	1,854	1,854	

Shiloh Community			
Land Use	Existing Land Use	Future Land Use	% Change
Low Density Residential	1,469	1,168	-20.49%
Medium Density Residential	180	163	-9.44%
Commercial	14	18	+ 28.57%
Industrial	0	0	0.00%
Conservation/Recreational	0	314	0.00%
Total	1,663	1,663	

Highway 343 Corridor South			
Land Use	Existing Land Use	Future Land Use	% Change
Low Density Residential	8,354	6,934	-17.00%
Medium Density Residential	735	1,116	+ 51.84%
Commercial	482	49	-89.93%
Industrial	0	0	0.00%
Conservation/Recreational	0	1,472	0.00%
Total	9,571	9,571	

Table 57 (continued)

Highway 343 Corridor North			
Land Use	Existing Land Use	Future Land Use	% Change
Low Density Residential	1,972	1,751	-11.21%
Medium Density Residential	108	0	-100.00%
Commercial	0	0	0.00%
Industrial	0	0	0.00%
Conservation/Recreational	0	329	0.00%
Total	2,080	2,080	

Highway 17 Corridor			
Land Use	Existing Land Use	Future Land Use	% Change
Low Density Residential	5,607	4,655	-16.98%
Medium Density Residential	164	0	-100.00%
Commercial	1,168	46	-96.06%
Industrial	0	453	0.00%
Conservation/Recreational	0	1,785	0.00%
Total	6,939	6,939	

Highway 158 Corridor			
Land Use	Existing Land Use	Future Land Use	% Change
Low Density Residential	206	0	-100.00%
Medium Density Residential	7	26	+271.43%
Commercial	0	0	0.00%
Industrial	0	116	0.00%
Conservation/Recreational	0	71	0.00%
Total	213	213	

Camden County			
Land Use	Existing Land Use	Future Land Use	% Change
Low Density Residential	119,164	37,628	-68.42%
Medium Density Residential	3,389	4,065	+19.95%
Commercial	1,151	614	-46.66%
Industrial	1,381	2,117	+53.29%
Conservation/Recreational	25,472	106,133	+316.67%
Total	150,557	150,557	

Table 57 (continued)

Land Use	Camden County Minus Study Areas		
	Existing Land Use	Future Land Use	% Change
Low Density Residential	98,323	21,003	+ 78.64%
Medium Density Residential	1,009	1,937	+ 91.97%
Commercial	848	101	-88.09%
Industrial	1,870	1,290	-31.02%
Conservation/Recreational	23,426	101,145	+ 331.76%
Total	125,476	125,476	

Source: Holland Consulting Planners, Inc.

The following table **summarizes fifteen (15) year market** increases in acreages for the various land use categories. **This forecast is the projected need.** The growth rates are based on the historical records of building permits which are provided in Table 39. **Due to the growth dynamics, it is imperative that the county constantly monitor the data included in Table 58.** The growth rates utilized in the village and highway corridor areas (44% annual) were twice those utilized in the remaining portions of the county (20% annual).

This growth demand will require the county to continue funding an expansion of its infrastructure systems, thereby increasing the inventory of land which will be suitable for development. **Without infrastructure expansion, Camden County cannot accommodate the anticipated growth demands. Please note that with infrastructure expansion, the village and highway corridor areas could expand.**

Table 58  
Camden County and Study Areas  
Acreage Forecast Based on Market Growth Demand

Land Use	South Mills				Build-out Estimated 2015 - 2020
	Existing Land Use	2005	2010	2015	
Low Density Residential	2,447	1,077	1,551	2,233	
Medium Density Residential	261	115	166	238	
Commercial	52	15	20	26	
Industrial	0	11	3	4	
Conservation/Recreational/Vacant	0	624	62	69	
Total	2,760	1,842	1,802	2,570	<b>2,760</b>

Table 58 (continued)

Camden					
Land Use	Existing Land Use	2005	2010	2015	Build-out Estimated 2015 - 2020
Low Density Residential	1,491	656	945	1,360	
Medium Density Residential	143	63	91	131	
Commercial	173	52	67	88	
Industrial	0	247	74	96	
Conservation/Recreational/Vacant	47	5	5	6	
<b>Total</b>	<b>1,854</b>	<b>1,023</b>	<b>1,182</b>	<b>1,681</b>	<b>1,854</b>

Shiloh					
Land Use	Existing Land Use	2005	2010	2015	Build-out Estimated 2015 - 2020
Low Density Residential	1,469	647	931	1,340	
Medium Density Residential	180	79	114	164	
Commercial	14	4	6	7	
Industrial	0	0	0	0	
Conservation/Recreational/Vacant	0	314	31	35	
<b>Total</b>	<b>1,663</b>	<b>1,044</b>	<b>1,082</b>	<b>1,546</b>	<b>1,663</b>

Highway 343 Corridor South					
Land Use	Existing Land Use	2005	2010	2015	Build-out Estimated 2015 - 2020
Low Density Residential	8,354	3,676	5,293	7,622	
Medium Density Residential	735	323	466	671	
Commercial	482	145	188	244	
Industrial	0	0	0	0	
Conservation/Recreational/Vacant	0	1,472	147	162	
<b>Total</b>	<b>9,571</b>	<b>5,616</b>	<b>6,094</b>	<b>8,699</b>	<b>9,571</b>

Highway 343 Corridor North					
Land Use	Existing Land Use	2005	2010	2015	Build-out Estimated 2015-2020
Low Density Residential	1,972	868	1,249	1,799	
Medium Density Residential	108	0	48	68	
Commercial	0	0	0	0	
Industrial	0	0	0	0	
Conservation/Recreational/Vacant	0	329	33	36	
<b>Total</b>	<b>2,080</b>	<b>1,197</b>	<b>1,330</b>	<b>1,903</b>	<b>2,080</b>

Table 58 (continued)

Land Use	Highway 17 Corridor				
	Existing Land Use	2005	2010	2015	Build-out Estimated 2015-2020
Low Density Residential	5,607	2,467	3,553	5,116	
Medium Density Residential	164	0	72	104	
Commercial	1,168	350	455	592	
Industrial	0	453	136	177	
Conservation/Recreational/Vacant	0	1,785	179	196	
Total	6,939	5,055	4,395	6,185	6,939

Land Use	Highway 158 Corridor				
	Existing Land Use	2005	2010	2015	Build-out Estimated 2015-2020
Low Density Residential	206	0	91	130	
Medium Density Residential	7	2	4	6	
Commercial	0	0	0	0	
Industrial	0	116	35	45	
Conservation/Recreational/Vacant	0	71	7	8	
Total	213	189	137	189	213

Land Use	Camden County Minus Study Areas				
	Existing Land Use	2005	2010	2015	Build-out Estimated 2015-2020
Low Density Residential	98,323	43,262	62,298	89,708	
Medium Density Residential	1,009	444	639	921	
Commercial	848	254	331	430	
Industrial	1,870	561	729	948	
Conservation/Recreational/Vacant	23,426	2,343	2,577	2,835	
Total	125,476	46,864	66,574	94,842	125,476

NOTES: The growth rates that were utilized to determine the future land use acreages were based on the number of building permits that were issued between 1999 and 2003. **While this data is limited, it predicts growth trends based on the most recent and accurate data.** We assumed a 44% growth rate for Low and Medium Density Residential areas, a 30% growth rate for Commercial and Industrial, and a 10% growth rate for Conservation/Recreation.



The following provides a summary of the **October, 2004**, estimated costs for the proposed infrastructure and community facilities needs identified in this plan in Section V (G), page 118:

Water System Improvements	\$ 7,800,000
Sewer System Improvements	\$ 9,800,000
Transportation Improvements	\$62,525,000
Educational Improvements	\$17,000,000
Camden County Landfill	\$ 250,000
South Mill Fire Department Building	\$ 384,000*
Shiloh Fire Department Building	\$ 384,000*

\*Does not include land cost.

### 3. Future Land Use Maps

There are nine future land use maps included in this document (see Maps 29 through 37). These include the Camden County Future Land Use Map and the individual study area maps for the following:

- South Mills Community.
- Camden Community.
- Shiloh Community.
- Highway 343 South Corridor.
- Highway 343 North Corridor.
- Highway 17 Corridor.
- Highway 158 Corridor.

Additionally, a map is included depicting the portions of the county outside of the defined study areas. **Based on this plan**, the allowable densities for future land use are governed by the county zoning ordinance. **The Land Use Plan is the foundation for the density and intensity in the county's Zoning Ordinance.** Zoning district definitions and allowable densities are shown on page 199.

All future land use maps are linked to the wetlands map, existing and future land suitability maps, historic site map, natural heritage area map, flood hazard map, and environmental composite map. The sensitive areas are included in the conservation areas depicted on the future land use map.

## MAP 29 - CAMDEN COUNTY FUTURE LAND USE

## MAP 30 - SOUTHMILLS FUTURE LAND USE

MAP 31 - CAMDEN FUTURE LAND USE

## MAP 32 - SHILOH FUTURE LAND USE

## MAP 33 - SOUTH 343 CORRIDOR FUTURE LAND USE

## MAP 34 - NORTH 343 CORRIDOR FUTURE LAND USE

## MAP 35 - 17 CORRIDOR FUTURE LAND USE



## MAP 36 - 158 CORRIDOR FUTURE LAND USE

MAP 37 - COUNTY MINUS STUDY AREAS FUTURE LAND USE

The land uses in each of these areas have been coordinated with the county's zoning ordinance and are classified as follows:

### **Moderate Density Residential**

*R-2 Mixed Single-Family Residential.* This district is designed to control the development of moderate density residential neighborhoods characterized by a mixture of single-family dwelling types in relatively close proximity to the three core villages of Camden, Shiloh, and South Mills, as appropriate. This district is intended to provide moderate cost housing options for residents, to restrict the encroachment of mixed residential types in other districts, and to restrict the encroachment of incompatible business uses (farm related or other) in established residential areas.

### **Low Density Residential/Agricultural**

*R-1 Mixed Village Residential.* This district is designed to provide for **low-density** residential development in areas that do not intrude into areas primarily devoted to agriculture in or near the three core villages of Camden, Shiloh, and South Mills, as appropriate.

*R-3 Basic Residential.* These districts are designed to provide for low density residential development in areas that are adjacent to those areas primarily devoted to agriculture. In addition, it is not intended for the placement of any manufactured homes within this district. Except as otherwise stated, or if the context of the use indicates otherwise, when the term "R-3 district" is used in this plan, it shall refer to both the R-3-1 district and the R-3-2 district.

- The R-3-1 district is an R-3 district having lots of one or more acres in size.
- The R-3-2 district is an R-3 district having lots of two or more acres in size.

*GUD General Use.* This district is established to allow opportunities for very low density residential development and bona fide farms, along with agricultural and related agricultural uses (i.e., timber, horticulture, silviculture, and aquaculture).

## Planned Unit Development/Mixed Use

This district is defined as the total development of one or more parcels physically connected by one central control or ownership. Through PUD, the county desires to foster development of land that has a higher degree of consideration of physical features and natural constraints to development than would be possible under general zoning or subdivision regulations. PUD is expected to promote a more efficient use of the land, a higher level of amenities, and more creative design than would otherwise be possible.

## Commercial

*CCD Community Core.* This district is designed to provide the core commercial use in the county's three villages, Camden, Shiloh, and South Mills, to help meet social, shopping, employment, and some housing needs of the county's rural residents in a village-type environment. Areas with this designation have historically been considered the "towns" of the county, or have the potential to fall into this category in the future, and contain a unique mix of uses in close proximity of each other. The goals of this district are:

- To preserve this special mix while minimizing conflicts between uses; and
- To allow only development that can adequately be served with public amenities.

*NCD Neighborhood Commercial.* This district is designed primarily to encourage the concentration of commercial facilities, as necessary, outside the core villages but still in clusters, and to provide readily accessible shopping facilities for rural residents. The district differs from the community core district in that uses are limited to small commercial and service businesses whose market is primarily those residents within the immediate vicinity. These districts shall be limited to between two and four acres in size and typically located near intersections. The Neighborhood Commercial district is also designed to include very limited kinds of water-related commercial activities to serve a waterfront neighborhood.

*HC Highway Commercial.* This district is designed to provide for and encourage the proper grouping and development of roadside uses that will best accommodate the needs of the motoring public along US 17, US 158, and NC 343. In addition, commercial uses served by large trucks and other intense commercial uses shall be encouraged to locate in these districts. These regulations are intended to control those aspects of development that affect adjacent residential land use, traffic flow, and the capacity of the land to absorb development. Specifically prohibited in this district are uses which create a hazardous or noxious effect and junkyards.

*MC Marine Commercial.* This district is designed to provide for the development of businesses which depend upon or are significantly related to waterfront and tourist locations. The district regulations are imposed so that services and commodities required by users of the county's waterways shall be provided in a manner that does not adversely affect the waters that attract those users or adjacent land users.

*Commercial Node.* Nodes are typically placed at the intersections of major thoroughfares. These nodes serve as community focus areas. Focus areas are concentrations of high intensity land use. The location and size of these commercial areas are not intended to be static. As the land around these commercial areas develops, larger node definitions, and possibly even shifts in location from one area to another, may be warranted. As commercial development takes place in the outlying areas of the county's planning jurisdiction, it should be buffered from surrounding areas by less intense/dense land uses.

## **Industrial**

*I-1 Light Industrial.* This district is designed to provide space for industries, wholesale and warehouse facilities, and some related service establishments which can be operated in a relatively clean and quiet manner and which will not be obnoxious to adjacent residential or commercial districts. Buffer zones should be provided between industrial and non-industrial land uses.

## **Conservation**

The conservation class is designated to provide for effective long-term management of significant limited or irreplaceable areas which include the following categories: natural resource fragile areas, coastal wetlands, 404 wetlands, estuarine shorelines, primary nursery areas, and estuarine and public trust waters. Policy statements in this plan address the county's intentions under this classification and support the 15A NCAC 7H CAMA regulations for protection of AEC's.

The development/land use densities are summarized as follows:

District	Density Regulations
R-1 Mixed Village Residential	40,000 square feet
R-2 Mixed Single-Family Residential	40,000 square feet
R-3 Basic Residential	
R-3-1	1 acre
R-3-2	2 acres
GUD General Use	5 acres
PUD Planned Unit Development/Mixed Use*	
Areas identified for residential uses only	3 dwelling units per acre
Areas identified for residential uses only when all of the residential and commercial structures within the PUD are connected to a public sewer system	4 dwelling units per acre
CCD Community Core	
With connection to public water system	20,000 square feet
With connection to public water and sewer system	10,000 square feet
NCD Neighborhood Commercial	40,000 square feet
HC Highway Commercial	40,000 square feet
MC Marine Commercial	40,000 square feet
I-1 Light Industrial	40,000 square feet
C Conservation	Should include R-1, R-2, R-3, and PUD densities

\*Density calculations will not include commercial areas. Thirty-five percent (35%) of the non-CAMA area intended for residential development of the tract shall be common open space. Fifty percent (50%) of open space must be designed for passive or active recreation, including but not limited to walking, jogging, hiking, bicycling, and other uses which involve general pedestrian access.

These density standards shall apply to both new development and redeveloped areas. NOTE: Refer to Map 24, page 111.

## SECTION VII. TOOLS FOR MANAGING DEVELOPMENT

### A. GUIDE FOR LAND USE DECISION MAKING

The introduction for the Plan for the Future Section (page 134) describes the role of the policies and future land use maps in local decisions regarding land use and development. It is intended that this document be an integral part of the Camden County decision making process concerning future land use. This document should be consulted prior to any decision being made by Camden County staff, Planning Board, and/or Board of Commissioners concerning land use and development.

### B. EXISTING DEVELOPMENT PROGRAM

The existing management program includes the following ordinances: Camden County Code, North Carolina Building Code, Septic Tank Regulations, National Flood Insurance Program, and the 1993 Camden County Land Use Plan. Preparation of the 1993 Land Use Plan was coordinated with the land use related codes.

The Camden County Board of Commissioners encourages the county's Planning Board and staff to utilize the 1993 Land Use Plan as a guide in making land use related decisions.

### C. ADDITIONAL TOOLS

Camden County will utilize the following additional tools to implement this plan:

- Conduct annual training sessions for the Camden County Planning Board and Board of Adjustment.
- The Planning Department staff, in concert with the Planning Board, shall prepare an annual report assessing the effectiveness of plan implementation. This report shall be presented to the Camden County Board of Commissioners.
- At a minimum, update the Land Use Plan and implementation process every five years.
- Revise the Camden County land use regulatory ordinances to accomplish the following:
  - Improve definitions

- Improve planned unit development, cluster development, and open space subdivision development provisions
  - Incorporate traditional neighborhood development design standards
  - Incorporate landscaping and buffering requirements
  - Improve road design standards
  - Improve site plan requirements
  - Require reverse frontage lots within subdivisions
  - Require interconnected street systems
  - Improve control of curb cuts
  - Incorporate provisions for the dedication of parks/open space
  - Develop industrial park standards
- Prepare a county-wide recreation and shoreline access plan.
  - Prepare a capital improvements plan/program to address the following: water, sewer, stormwater, and transportation.

#### D. ACTION PLAN/SCHEDULE

##### 1. **Citizen Participation**

For the preparation of this plan, the Camden County Board of Commissioners adopted a citizen participation plan on February 27, 2003. A copy of that plan is included as Appendix I. Following adoption of this plan, Camden County will implement the following to ensure adequate citizen participation:

- The county will encourage public participation in all land use decisions and procedure development processes and encourages citizen input via its boards, commissions, and agencies.
- Camden County will advertise all meetings of the Camden County Planning Board and Board of Adjustment through newspaper advertisements and public service announcements.
- Camden County will utilize advisory committees to assess and advise the county on special planning issues/needs.



- The county will, at least annually, conduct a joint meeting of the Camden County Board of Commissioners and the county's Planning Board to identify planning issues/needs.
- The county will establish a Planning Department web-site for better public information access. The site will include this plan.
- All public hearings for changes to land use related ordinances which affect AECs shall include in the notice a specific description of the impact of the proposed change on the AECs.
- Ensure that the membership of all planning related and ad hoc advisory committees has a broad cross section of Camden County's citizenry.

## 2. Action Plan/Schedule

Refer to Section VI for the schedule of implementing actions.

### E. RESOURCE CONSERVATION MANAGEMENT ACTION PLAN/POSITIVE AND NEGATIVE IMPACTS OF LAND USE PLAN POLICIES

Camden County believes that the policies, management goals, planning objectives, and land use plan requirements contained in this document will have positive impacts for the county. However, the following could have some negative impacts:

- Transportation improvements in sensitive areas.
- Infrastructure improvements which extend through sensitive environmental areas.
- Potential infringement of growth on sensitive areas.
- Negative impact of population growth on the Camden County School System.
- Overall negative impact on the capacity of Camden County's facilities.

The management objectives, policies, and implementing actions address the issues associated with these possible negative impacts. **Mitigating policies are stated in the conservation policies, page 147; stormwater control policies, page 148; infrastructure carrying capacity, page 149; and water quality, page 157.**

Table 59  
Camden County  
Policy Analysis Matrix – Land Use Plan Management Topics

Management Topics	Policy Benchmarks – Indicate whether policy <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
<b>Land Use and Development Policies</b>	<ul style="list-style-type: none"> <li>• more planned access locations</li> <li>• upgrades to existing access locations</li> </ul>	<ul style="list-style-type: none"> <li>• reduction in habitat loss and fragmentation related to impacts of land use and development</li> <li>• reduction of water resource and water quality degradation</li> </ul>	<ul style="list-style-type: none"> <li>• water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns</li> </ul>	<ul style="list-style-type: none"> <li>• land uses and development patterns that reduce vulnerability to natural hazards</li> <li>• land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• land use and development criteria and measures that abate impacts that degrade water quality</li> </ul>	<ul style="list-style-type: none"> <li>• preservation of cultural, historic, and scenic areas</li> <li>• support of economic development</li> <li>• development of human resources</li> </ul>
Public Access: <u>P.1 - P.5</u>	P.1 (B), P.2 (B), P.3 (B), P.4 (B), P.5 (B)					
Land Use Compatibility: <u>P.6 - P.31</u>		P.6 (N), P.7 (N), P.8 (B), P.9 (D), P.10 (N), P.11 (N), P.12 (B), P.13 (B), P.14 (N), P.15 (B), P.16 (N), P.17 (N), P.18 (N), P.19 (B), P.20 (B), P.21 (B), P.22 (N), P.23 (N), P.24 (B), P.25 (N), P.26 (B), P.27 (N), P.28 (N), P.29 (B), P.30 (B), P.31 (N)				
Infrastructure: <u>P.32 - P.48</u>			P.32 (B), P.33 (B), P.34 (B), P.35 (B), P.36 (N), P.37 (D), P.38 (D), P.39 (D); P.40 (B), P.41 (B), P.42 (B), P.43 (N), P.44 (N), P.45 (N), P.46 (B), P.47 (N), P.48 (N),			
Natural Hazards: <u>P.49 - P.55</u>				P.49 (B), P.50 (N), P.51 (N), P.52 (B), P.53 (B), P.54 (B), P.55 (B)		

Table 59 (continued)

Management Topics	Policy Benchmarks – Indicate whether policy <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
Land Use and Development Policies	<ul style="list-style-type: none"> <li>• more planned access locations</li> <li>• upgrades to existing access locations</li> </ul>	<ul style="list-style-type: none"> <li>• reduction in habitat loss and fragmentation related to impacts of land use and development</li> <li>• reduction of water resource and water quality degradation</li> </ul>	<ul style="list-style-type: none"> <li>• water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns</li> </ul>	<ul style="list-style-type: none"> <li>• land uses and development patterns that reduce vulnerability to natural hazards</li> <li>• land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• land use and development criteria and measures that abate impacts that degrade water quality</li> </ul>	<ul style="list-style-type: none"> <li>• preservation of cultural, historic, and scenic areas</li> <li>• support of economic development</li> <li>• development of human resources</li> </ul>
Water Quality: <u>P.56 - P.73</u>					P.56 (B), P.57 (N), P.58 (B), P.59 (B), P.60 (B), P.61 (B), P.62 (B), P.63 (N), P.64 (B), P.65 (N), P.66 (B), P.67 (B), P.68 (B), P.69 (B), P.70 (N), P.71 (B), P.72 (B), P.73 (B)	
Local Concerns: <u>P.74 - P.84</u>						P.74 (B), P.75 (B), P.76 (B), P.77 (B), P.78 (B), P.79 (B), P.80 (B), P.81 (B), P.82 (B), P.83 (B), P.84 (B), P.85 (D)

## *Notes to the Policy Analysis Matrix:*

### **1. Public Access**

**P.1 (B) – P.5 (B)** - Policies P.1 through P.5 all pertain to the provision and improvement of public access within Camden County. All policies included in the plan either improve existing facilities, or provide for the construction of additional public access sites in compliance with NC CAMA standards. The county views public waterfront and estuarine access as a key to tourism and economic development in the county. Providing easy public access to environmentally sound areas of the county will assist in these efforts, as well as provide additional recreational opportunities for county residents.

### **2. Land Use Compatibility**

**P.8 (B)** - This policy restricts the occurrences of rezoning from residential to non-residential uses. By implementing this policy, residential development will be maintained throughout the county according to existing zoning districts, and development of commercial and industrial facilities will be restricted to portions of the county supporting this zoning classification. This will concentrate non-residential development into specific areas, making it easier to deal with issues of stormwater control and water quality associated with large commercial and industrial developments.

**P.9 (D)** - High density residential construction will inevitably occur within Camden County. Although high density development of any kind will be potentially detrimental to water quality in adjacent drainage basins, the county must require that this development take place where supporting infrastructure is present.

**P.12 (B)** - Through discouraging development in areas designated as low density/agricultural on the Future Land Use Map, the county is setting a precedent that conversion of farmland to developed land is not desirable. The county appreciates its rural nature and would like to maintain this. Additionally, a majority of the areas that fall within the low density/agricultural land use districts are located either within flood zones or environmentally sensitive areas.

**P.13 (B) and P.15 (B)** - Requiring wooded and conservation/open space buffers between residential and non-residential areas within the county will provide several key benefits. Not only will these areas act as a transition from residential to nonresidential areas, but will also address the issue of stormwater runoff. Wherever possible riparian buffers will be required as part of all medium to high density subdivisions.

**P.19 (B)** - By adopting a policy requiring future industrial development and/or expansion to meet the specific criteria outlined in policy P.19, the county has made it clear that industry that is potentially detrimental to water quality within the county will not be allowed. As stated in the policy, beyond the requirement to obtain a CAMA permit for development, industrial development will not be allowed within coastal wetlands, estuarine waters, or public trust waters unless the development is specifically water dependent. Additionally, all county zoning ordinance provisions must be met for industrial development and expansion.

**P.20 (B)** - Restricting the development of solid waste/landfill facilities within the county will result in maintaining habitats, and an overall benefit to water quality throughout the planning period.

**P.21 (B)** - Through concentrating industrial development into concentrated areas, addressing water quality issues resulting from such development will be easier to achieve. Additionally, large industrial operations require a great deal of infrastructure capacity, and therefore the county can better allocate these resources if industrial operations are centrally located, such as a concentrated industrial park.

**P.24 (B)** - Through not allowing noxious industrial development, and restricting industry to “light” industry, the county will improve water quality throughout the county. Allowing the development of environmentally degrading industries to locate within the county will result in a rapid decline in the county’s air and water quality. As a result of this, wildlife habitats and water quality would be immediately threatened. Because of this, policy P.24 will be adopted.

**P.26 (B)** - The county will not allow commercial, residential, or industrial development to occur within Natural Heritage Areas. Development within these areas will be restricted to recreation and open space. Development within other environmentally sensitive areas will be required to comply with all local, state, and federal restrictions including those imposed by CAMA.

**P.29 (B)** - Camden County recognizes the impact that construction activity can have on water quality. Due to this fact, policy P.29 was developed to address this concern. Based on this policy, the county will pro-actively address the issue of construction and post-construction sediment runoff.

**P.30 (B)** - The county fully supports all CAMA and FEMA related policies, programs, and requirements dealing with sediment control, flood proofing, and stormwater control.

### **3. Infrastructure**

**P.32 (B) – P.35 (B) and P.40 (B) – P.42 (B)** - Each of these policy statements details the county's support for providing adequate public facilities, infrastructure, and county services to meet the current and future demands of Camden County residents and businesses. Camden County is aware of the development pressures facing the region, and therefore, the Board of Commissioners supports all efforts to improve and expand on existing services and infrastructure.

**P.37 (D) – P.39 (D)** - Camden County will allow for the use of septic tanks, as well as the construction and operation of package treatment plants. The county is currently undergoing efforts to install a central sewer system, in an effort to eliminate the reliance on septic tanks and private water treatment facilities throughout the county. Although septic tanks and package treatment plants are potentially detrimental to the environment, at this time the county has no other alternative. The county fully supports the efforts of the District Health Department and North Carolina State University in investigating the operation of package water treatment plants, to ensure that operations are properly maintained.

**P.46 (B)** - By supporting all approved Transportation Improvement Projects as identified and funded through the North Carolina Department of Transportation, the county has expressed its support for improving the overall transportation network through the county. There are currently two road improvement projects, four bridge projects, and one multi-use path project scheduled in the county.

### **4. Natural Hazards**

**P.49 (B)** - As noted in this policy, Camden County supports the enforcement of all local, state, and federal policies restricting development within areas to five feet above high water. Restricting development in these areas will not ensure that the environmental quality of these areas will be maintained, but will not allow development to occur in flood prone areas where high water from storm surges is frequent.

**P.52 (B) – P.55 (B)** - Camden County recognizes the potential impact that significant cyclonic storms can have on the county. Storm surge resulting from hurricanes and Nor'easters can be potentially devastating to residential property owners and businesses if development is not regulated in a fashion that discourages development within historically flood prone areas. All of the policies listed here are directed at minimizing development within hazardous areas. Implementation of these policies will result in more sound development and redevelopment in the wake of a natural hazard event such as a major hurricane.

## **5. Water Quality**

**P.56 (B)** - Camden County recognizes the importance of protecting water quality for its citizens and the value that the CAMA guidelines and the Soil Conservation Service Best Management Practices have for that protection.

**P.58 (B)** - The water quality is significant to commercial and recreational fishing. Camden County wants to improve the water quality conditions so that fishing will increase in the area. The increase of visitors to the area has a direct impact on the economy of the area.

**P.59 (B)** - Best Forestry Management Practices assist in controlling the quantity and quality of runoff.

**P.60 (B)** - Disposal of toxic wastes negatively affects fragile areas and wildlife habits.

**P.61 (B)** - For justification of this policy, see P.61.

**P.62 (B)** - Underground storage tanks installed before the mid-1980s were made of bare steel. Bare steel will likely corrode over time and has the potential to leak hazardous material into the groundwater. Faulty installation and inadequate operation can also cause hazardous material to leak. Regulation of USTs has caused many of them to be closed.

**P.64 (B)** - Water quality issues in other areas could affect Camden County and vice versa. The Pasquotank River Basin Water Quality Management Plan recommends long-term water quality management strategies for the entire basin.

**P.66 (B)** - These pollutants can degrade water quality and potentially destroy the marine life.

**P.67 (B)** - Malfunctioning package treatment plants and septic tanks can introduce pollutants into the fragile areas and kill the environment.

**P.68 (B)** - At times, local budgets do not allow for water quality programs. Grants from the state for these programs can bridge the gap in implementing water quality programs.

**P.69 (B) - P.71 (B)** - Camden County recognizes the importance and benefits of aquaculture. However, if aquaculture facilities do not meet certain requirements, they can negatively affect native fish (by crowding them out) and the water quality (water with high amounts of fish feces and uneaten food being introduced when released back into rivers and streams).

**P.72 (B) – P.73 (B)** - Water quality issues could arise as a result of mooring fields and floating homes. Sewage pumpout and abandoned vessels are the primary issues.

## **6. Local Areas of Concern**

**P.74 (B) – P.75 (B)** - Preservation of historic properties and the Great Dismal Swamp is extremely important to county residents. Maintaining the historical character of the county is a key component to the overall quality of life in the county, as well as the tourism industry. Additionally, the Great Dismal Swamp is a vast natural area, which provides a great deal of recreational opportunities for both residents and visitors. The Great Dismal Swamp is becoming a significant factor in economic development efforts through the use of eco-tourism.

**P.76 (B) – P.80 (B)** - These policies reinforce the county's stance with regards to economic development within the county. The county fully supports all policies, projects, and programs that will play a role in the advancement of economic development throughout the county. Additionally, these policies reiterate the county's stance with regards to maintaining light industrial development, and the provision of adequate public facilities and services to support this development.

**P.81 (B) – P.84 (B)** - These policies are intended to generally protect the quality of life within the county and to reduce environmental and structural hazards and nuisances. The issues outlined in policies P.81 through P.84 are general statements that address issues that are of specific concern to county residents. Implementation of these policies will serve to improve the overall quality of life within the county. Additionally, the county supports all state and federal policies that will serve to restrict the development of man-made hazards within the county. This also will serve to improve the overall quality of life as well as environmental conditions throughout the county.

**P.85 (D)** - This policy outlines the county's stance with regards to the provision of water and sewer service throughout the county. As stated, the county is currently undergoing efforts to install and provide central sewer service to county residents. In order to achieve this goal, infrastructure lines will have to be constructed through environmentally sensitive areas. Where this is necessary, all precautions will be taken to minimize the impact on the environment, and all local, state and federal permits will be obtained prior to construction of these facilities.



## **SECTION VIII. HAZARD MITIGATION, POST RECOVERY, AND EVACUATION PLANS**

### **A. INTRODUCTION**

This section of the land use plan has been prepared to assist the county in preparing management policies for major storms. While post-disaster planning is important, the county recognizes that proper preventive action is the best way to reduce flood and storm-related damage.

The purpose of this section is to provide a tool with which to protect the health, safety, and economic security of the residents of Camden County from natural hazards. The policies outlined are to be utilized until Pasquotank County has adopted their Multi-Jurisdictional Hazard Mitigation Plan, which includes Camden County. The county will benefit in many ways from these two documents by: saving lives and reducing injuries, preventing or reducing property damage, reducing economic losses, minimizing social dislocation and stress, protecting infrastructure from damage, protecting mental health, limiting legal liability of government and public officials, and possibly reducing the National Flood Insurance rates for residents. The Pasquotank County Hazard Mitigation Plan referenced above will meet all requirements of the Disaster Mitigation Act of 2000 (DMA2K) and North Carolina's Senate Bill 300. These requirements must be met in order for the county to be eligible for public assistance in the event of a natural disaster.

### **B. HAZARD IDENTIFICATION**

North Carolina is subject to many different types of natural hazards including hurricanes, nor'easters, tornadoes, severe winter weather, wildfires, flooding, and droughts. The susceptibility of an area to these events depends largely upon its geographic location.

It is important that the county understand the hazards to which it is most susceptible so that it can direct its mitigation efforts and resources toward the hazards which pose the greatest risk to county residents and property. It is also important that policy makers understand the nature of each hazard and its likelihood of occurrence within their jurisdiction. The following section summarizes each of the hazards mentioned earlier plus some additional hazards that occur in North Carolina. The summary includes a description of the hazard, a brief history of occurrence, and a discussion of its likelihood of occurrence.

## 1. Hurricanes

Hurricanes are cyclonic storms that originate in tropical ocean waters poleward of about 5 degrees latitude. Basically, hurricanes are heat engines, fueled by the release of latent heat from the condensation of warm water. Their formation requires a low pressure disturbance, sufficiently warm sea surface temperature, rotational force from the spinning of the Earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere.

Hurricanes that impact North Carolina form in the so-called Atlantic Basin, from the west coast of Africa westward into the Caribbean Sea and Gulf of Mexico. Hurricanes in this basin generally form between June 1 and November 30, with a peak around mid-September. As a hurricane develops, barometric pressure at its center falls and winds increase. Winds at or exceeding 39 mph result in the formation of a tropical storm, which is given a name and closely monitored by the NOAA National Hurricane Center in Miami, Florida. When winds are at or exceed 74 mph, the tropical storm is deemed a hurricane.

Hurricane intensity is measured using the Saffir-Simpson Scale, ranging from 1 (minimal) to 5 (catastrophic). The following scale categorizes hurricane intensity linearly based upon maximum sustained winds, minimum barometric pressure, and storm surge potential.

**Category 1:** Winds of 74 to 96 miles per hour. Damage primarily to shrubbery, trees, foliage, and unanchored mobile homes. No appreciable wind damage to other structures. Some damage to poorly constructed signs. Storm surge possibly 3 to 5 feet above normal. Low-lying roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.

**Category 2:** Winds of 97 to 111 miles per hour. Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roof materials of buildings; some window and door damage. No major wind damage to buildings. Storm surge possibly 6 to 8 feet above normal. Coastal roads and low-lying escape routes inland cut by rising water 2 to 4 hours before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying island areas required.

**Category 3:** Winds of 112 to 131 miles per hour. Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some window and door damage. Some structural damage to small buildings. Mobile homes destroyed. Storm surge possibly 9 to 12 feet above normal. Serious flooding at coast and

many smaller structures near coast destroyed; larger structures near coast damage by battering waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives.

**Category 4:** Winds of 132 to 155 miles per hour. Shrubs and trees blown down; all signs down. Extensive damage to roofing materials, windows, and doors. Complete failure of roofs on many small residences. Complete destruction of mobile homes. Storm surge possibly 13 to 18 feet above normal. Major damage to lower floors of structures near shore due to flooding and battering by waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Major erosion of beaches.

**Category 5:** Winds greater than 155 miles per hour. Shrubs and trees blown down; considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes. Storm surge possibly greater than 18 feet above normal. Major damage to lower floors of all structures less than 15 feet above sea level. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives.

North Carolina has had an extensive hurricane history dating back to colonial times. During the nineteenth century, storms occurred in 1837, 1846, 1856, 1879, 1883, and 1899. During the 1950s, North Carolina was ravaged by several hurricanes, including Hazel, Connie, Diane, and Ione. Between 1960 - 1990, there was a decrease in landfalling hurricanes, with the exception of Hurricane Donna in 1960, Hurricane Ginger in 1971, and Hurricane Diana in 1984. Recent history has included several hurricanes as well, with Hugo (1989), Emily (1993), Opal (1995), Bertha (1996), Fran (1996), Bonnie (1998), Dennis (1999), Floyd (1999), and Isabel (2003) all leaving their mark on North Carolina. However, these storms had varying impacts on Camden County.

**Likelihood of Occurrence:** North Carolina's geographic location on the Atlantic Ocean and its proximity to the Gulf Stream make it prone to hurricanes. In fact, North Carolina has experienced the fourth greatest number of hurricane landfalls of any state in the twentieth century (trailing Florida, Texas, and Louisiana).

Camden County is located on the Intracoastal Waterway and is immediately adjacent to the Albemarle Sound. The proximity of the county to the coast greatly increases the likelihood of occurrence for hurricanes. Using the likelihood of occurrence chart (see Table 61 on page 218) as a guide, it was determined that hurricanes are "likely" to occur in Camden County.

## 2. Thunderstorms and Tornadoes

Thunderstorms are the result of convection in the atmosphere. They are typically the by-product of atmospheric instability, which promotes the vigorous rising of air parcels that form cumulus and, eventually, the cumulonimbus (thunderstorm) cloud.

A typical thunderstorm may be three miles wide at its base, rise to between 40,000 to 60,000 feet in the troposphere, and contain half a million tons of condensed water. Conglomerations of thunderstorms along cold fronts (with squall lines) can extend for hundreds of miles. Thunderstorms contain tremendous amounts of energy derived from condensation of water. Wind shears sometimes associated with thunderstorms can cause extensive property damage and power outages.

According to the National Weather Service, a severe thunderstorm is a thunderstorm which produces tornadoes, hail 0.75 inches or more in diameter, or winds of 58 mph. However, the tornado is by far the greatest natural hazard threat from a severe thunderstorm.

The National Weather Service defines a tornado as a violently rotating column of air in contact with the ground and extending from the base of a thunderstorm. The intensity, path length, and width of tornadoes are rated according to a scale developed by T. Theodore Fujita and Allen D. Pearson. The Fujita-Pearson Tornado Scale is provided in Table 60.

Table 60  
The Fujita-Pearson Tornado Scale

F-Scale	Damage	Winds (mph)	Path Length (miles)	Mean Width (miles)
F0	Light	40-72	< 1	< 0.01
F1	Moderate	73-112	1-3.1	0.01-0.03
F2	Considerable	113-157	3.2-9.9	0.04-0.09
F3	Severe	158-206	10-31	0.1-0.31
F4	Devastating	207-260	32-99	0.32-0.99
F5	Incredible	261-318	≥ 100	≥ 1.0

Source: NC Division of Emergency Management, Local Hazard Mitigation Planning Manual.

Between the years 1953-1990, 567 tornadoes were recorded in North Carolina. Only one of these storm events was located within Camden County.

**Likelihood of Occurrence:** Thunderstorms are common throughout North Carolina, and have occurred in all months. Thunderstorm-related deaths and injuries in North Carolina (1959-1992) have peaked during July and August. Between 1953 and 1990, 71% of North Carolina's tornadoes were classified as weak, 28% as strong, and about 1% as violent. Based on Southeast Regional Climate Center (SERCC) statistics, North Carolina ranks 22<sup>nd</sup> in total number of tornadoes and 18<sup>th</sup> in tornado deaths in the United States for the period 1953-1995.

Although tornadoes have been reported in North Carolina throughout the year, most of them have occurred in the spring, with 13% in March, 11% in April, 22% in May, and 14% in June. Based on the Likelihood of Occurrence Chart (see Table 61 on page 218), Camden County is considered to have a "highly likely" likelihood of occurrence.

### **3. Flooding**

Flooding is a localized hazard that is generally the result of excessive precipitation. However, in coastal areas, storm surge and wind-driven waves are significant components of flooding. Floods can be generally considered in two categories: flash floods, the product of heavy localized precipitation in a short time period over a given location; and general floods, caused by precipitation over a longer time period and over a given river basin.

Flooding is the most common environmental hazard in Camden County, due to the county's proximity to the coast and the attraction of residents to these coastal areas. Flash floods occur within a few minutes or hours of heavy amounts of rainfall or from a dam or levee failure. Flash floods can destroy buildings and bridges, uproot trees, and scour out new drainage channels. Periodic flooding of lands adjacent to non-tidal rivers and streams is a natural and inevitable occurrence. When stream flow exceeds the capacity of the normal water course, some of the above-normal stream flow spills over onto adjacent lands within the floodplain. Riverine flooding is a function of precipitation levels and water runoff volumes within the watershed of the stream or river.

Floodplains are divisible into areas expected to be inundated by spillovers from stream flow levels associated with specific flood-return frequencies. The National Flood Insurance Program uses flood hazard zone designations to indicate the magnitude of flood hazards in specific areas (see Map 3, page 33). The following are flood hazard zones located within Camden County and a definition of what each zone means.

**Zone AE:** This zone is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In

most instances, Base Flood Elevations (BFEs) derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

**Zone A:** This zone is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations (BFEs) or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

Coastal flooding is typically a result of storm surge, wind-driven waves, and heavy rainfall. These conditions are produced by hurricanes during the summer and fall, and nor'easters and other large coastal storms during the winter and spring. Storm surges may overrun barrier islands and push sea water up coastal rivers and inlets blocking the downstream flow of inland runoff. Thousands of acres of crops and forestlands may be inundated by both saltwater and freshwater. Escape routes, particularly from barrier islands, may be cut off quickly stranding residents in flooded areas and hampering rescue efforts.

**Likelihood of Occurrence:** Flood hazard varies by location and type of flooding, however, roughly 56% of Camden County's land is located within a flood hazard area. Coastal areas are most at risk from flooding caused by hurricanes, tropical storms, and nor'easters. Low-lying coastal areas in close proximity to the shore, sounds, or estuaries are exposed to the threat of flooding from storm surge and wind-driven waves, as well as from intense rainfall. Areas bordering rivers may also be affected by large discharges caused by heavy rainfall over upstream areas.

The dominant sources of flooding in the county are storm surge inundation and local ponding of stormwater runoff. As mentioned before, fifty-six percent (56%) of the county's land is located within a flood hazard area, and the county is located on the Intracoastal Waterway. Due to its geographical location, Camden County is susceptible to flooding. The likelihood of occurrence for flooding, based on the Likelihood of Occurrence Chart (see Table 61 on page 218), is "likely."

#### **4. Nor'easters**

In the past decade, research meteorologists have recognized the significance of nor'easters and their potential to cause damage along the coast. Unlike hurricanes, these storms are extratropical and derive their strength from horizontal gradients in temperature.

The presence of the warm Gulf Stream waters off the eastern seaboard during the winter acts to dramatically increase surface horizontal temperature gradients within the coastal zone. During winter offshore cold periods, these horizontal temperature gradients can result in rapid and intense destabilization of the atmosphere directly above and shoreward of the Gulf Stream. This period of instability often precedes wintertime coastal extratropical cyclone development.

It is the temperature structure of the continental air mass and the position of the temperature gradient along the Gulf Stream that drives this cyclone development. As a low pressure deepens, winds and waves can uninhibitedly increase and cause serious damage to coastal areas as the storm generally moves to the northeast. The proximity of North Carolina's coast to the Gulf Stream makes it particularly prone to nor'easters.

A number of notable nor'easters have impacted North Carolina in recent decades, including the Ash Wednesday Storm of March 1962, but they were typically only of local concern. In March 1983, a nor'easter occurred that brought about widespread flooding.

**Likelihood of Occurrence:** Although nor'easters are more diffuse and less intense than hurricanes, they occur more frequently and cover larger areas and longer coastal reaches at one time. As a result, the likelihood of a nor'easter occurring in Camden County is much higher than that of a hurricane. However, the potential for significant damage to the county resulting from a nor'easter is much less than that of a hurricane. Analysis of nor'easter frequency by researchers reveals fewer nor'easters during the 1980s. However, the frequency of major nor'easters has increased in recent years. The likelihood of occurrence, based on the Likelihood of Occurrence Chart (see Table 61 on page 218), is "possible".

## 5. Severe Winter Storms

Severe winter storms can produce an array of hazardous weather conditions, including heavy snow, blizzards, freezing rain and ice pellets, and extreme cold. Severe winter storms are extratropical cyclones fueled by strong temperature gradients and an active upper-level jet stream. The winter storms that impact North Carolina generally form in the Gulf of Mexico or off the southeast Atlantic Coast. Few of these storms result in blizzard conditions, defined by the presence of the winds in excess of 35 mph, falling and blowing snow, and a maximum temperature of 20 degrees Fahrenheit. While the frequency and magnitude of snow events are highest in the mountains due to the elevation, the geographical orientation of the mountains and Piedmont contribute to a regular occurrence of freezing precipitation events (e.g., ice pellets and freezing rain) in the Piedmont.

There have been eight (8) incidences of severe winter weather in Camden County since 1996. Snow and sleet occur on an average of once or twice a year. The main effects of winter storms in Camden County are immobility and a large number of frozen water pipes. It is important to note that extreme low temperatures are also a hazard for the county and do not necessarily occur during times of sleet and snow.

**Likelihood of Occurrence:** The entire State of North Carolina has a likelihood of experiencing severe winter weather. The threat varies by location and by type of storm. Coastal areas typically face their greatest threat from nor'easters and other severe winter coastal storms. Freezing rain and ice storms typically occur once every several years at coastal locations, and severe snowstorms have been recorded occasionally in coastal areas. Based on historic information and the location of the county, the likelihood of occurrence for a severe winter storm is "possible" (see Table 61 on page 218).

## **6. Wildfire**

A wildfire is an uncontrolled burning of grasslands, brush, or woodlands. The potential for wildfire depends upon surface fuel characteristics, recent climate conditions, current meteorological conditions, and fire behavior. Hot, dry summers and dry vegetation increase susceptibility to fire in the fall, a particularly dangerous time of year for wildfire. The potential for a major fire hazard depends on the characteristics of the fuel, the climate, and fire behavior. While natural fires occur in any area in which there is vegetation, flammability varies by species, moisture content, and is influenced by the climate. Temperate, primarily deciduous forests, such as those in North Carolina are most vulnerable to fire in autumn when the foliage dries out. Grasses are least prone to ignition in the morning when their moisture content is greatest.

Many wildfires have been caused by lightning strikes; however, humans are the greatest cause of wildfires. The progressive expansion of human activities into heavily vegetated areas has not only increased the number of wildfires but also increased the losses to life and property. The majority of fires that threaten life and property have been due to human actions. Main sources of ignition have been agricultural fires, discarded cigarette butts, and campfires that have gotten out of control.

**Likelihood of Occurrence:** In North Carolina, wildfire potential has been assessed using State Forest Service records for the period 1950-1993. Counties were classified as High (score of 3), Moderate (score of 2), or Low (score of 1) depending on their rank for both number of fires and number of acres burned. The scores for both of these statistics were then added to generate a combined classification. The combined scores ranged from a low of 2 to a high of 5. Camden County's combined score was a 2, indicating a low probability of occurrence. The likelihood of occurrence for wildfires is "possible" (see Table 61 on page 218).



## 7. Drought/Heat Waves

The National Drought Mitigation Center (NDMC) generally defines a drought as a hazard of nature that is a result of a deficient supply of precipitation to meet the demand. Droughts occur in all types of climate zones and have varying effects on the area experiencing the drought. Droughts tend to be associated with heat waves. An extended drought period may have economic impacts (agriculture, industry, tourism, etc.), social impacts (nutrition, recreation, public safety, etc.), and environmental impacts (animal/plant, wetland, and water quality).

NDMC also reports that droughts are related to the balance between precipitation and evapotranspiration or to the timing of seasonal occurrences such as rainy seasons. Often times, development and human involvement aggravate the impact of droughts. Planning for droughts has become increasingly more important. Thirty-eight states have some type of drought plan in place. North Carolina is one of those states with a drought plan focusing on response.

**Likelihood of Occurrence:** It is difficult for scientists to predict when droughts will occur. They are dependent upon the accurate forecasting of precipitation and temperature. Precipitation is a very important component of water supply and studying historic precipitation data and the area's climate can provide an idea of the potential for drought. The Soil Survey of Camden County, North Carolina states that groundwater is plentiful throughout the county and precipitation occurs throughout the year. Annual precipitation is 49 inches with fifty-seven percent (57%) occurring between April and September, which is the growing season for most crops grown in the area. Droughts can occur in the county but as mentioned above they are difficult to predict. In light of the climate in the area, the likelihood of occurrence is "possible" (see Table 61 on page 218).

Table 61  
Hazard Identification and Analysis Summary

Type of Hazard & Associated Elements	Likelihood of Occurrence <sup>1</sup> (Highly Likely, Likely, Possible, Unlikely)	Intensity Rating <sup>2</sup> (Intensity Scales or Relative Terms)	Potential Impact <sup>3</sup> (Catastrophic, Critical, Limited, Negligible)
Hurricanes	Likely	Severe	Critical
Thunderstorms/ Tornados	Highly Likely	Moderate	Negligible
Flooding	Likely	Severe	Critical
Nor'easters	Possible	Moderate	Limited
Severe Winter Storms	Possible	Moderate	Negligible

Table 61 (continued)

Type of Hazard & Associated Elements	Likelihood of Occurrence <sup>1</sup> (Highly Likely, Likely, Possible, Unlikely)	Intensity Rating <sup>2</sup> (Intensity Scales or Relative Terms)	Potential Impact <sup>3</sup> (Catastrophic, Critical, Limited, Negligible)
Wildfire	Possible	Moderate	Negligible
Drought	Possible	Mild	Negligible

## NOTES:

<sup>1</sup> Likelihood of occurrence was estimated using historic data and the following chart:

Likelihood	Frequency of Occurrence
Highly Likely	Near 100% probability in the next year
Likely	Between 10 and 100% probability in the next year, or at least one chance in the next 10 years
Possible	Between 1 and 10% probability in the next year, or at least one chance in the next 100 years
Unlikely	Less than 1% probability in the next year, or less than one chance in the next 100 years

<sup>2</sup> The hazard's intensity was estimated using historic data and various standardized scales.

<sup>3</sup> The potential impact was estimated by considering the magnitude of the event, how large an area within the community is affected, and the amount of human activity in that area, then using the following chart as a tool:

Level	Area Affected	Impact
Catastrophic	More than 50%	<ul style="list-style-type: none"> <li>• Multiple deaths</li> <li>• Complete shutdown of facilities for 30 days or more</li> <li>• More than 50 percent of property is severely damaged</li> </ul>
Critical	25 to 50%	<ul style="list-style-type: none"> <li>• Multiple severe injuries</li> <li>• Shutdown of critical facilities for 1-2 weeks</li> <li>• More than 25 percent of property is severely damaged</li> </ul>
Limited	10 to 25%	<ul style="list-style-type: none"> <li>• Some injuries</li> <li>• Shutdown of some critical facilities 24 hours to one week</li> <li>• More than 10 percent of property is severely damaged</li> </ul>
Negligible	Less than 10%	<ul style="list-style-type: none"> <li>• Minor injuries</li> <li>• Minimal quality-of-life impact</li> <li>• Shutdown of some critical facilities and services for 24 hours or less</li> <li>• Less than 10 percent of property is severely damaged</li> </ul>

Source: North Carolina Division of Emergency Management.

## C. DEVELOPMENT VULNERABILITY

Vulnerability to a natural hazard is defined as the extent to which people experience harm and property damage from a hazard. Hazards may result in loss of life or injury to people; loss of or damage to homes, businesses, and industries; loss or damage to automobiles, furnishings, records and documents; damages or interruptions to power and telephone lines; damage or closing of roads, railroads, airports, and waterways; and general disruption of life. It is important to know where and to what extent the community is susceptible to the impacts of natural hazards. To fully understand the extent of Camden County's vulnerability, it is necessary to know what is currently at risk and what could be at risk if growth and development occur as currently permitted.

Camden County, as shown on Map 1 earlier in the plan, is located immediately adjacent to the Intracoastal Waterway and Albemarle Sound. The county is also in close proximity to the Pamlico Sound, which leads to the Atlantic Ocean.

### 1. **Zoning and Existing Land Use**

Camden County encompasses 150,557 acres, or 235 square miles. There are twelve zoning districts: four of the districts are residential zoning districts, three are business zoning districts, two are industrial zoning districts; there are also community core, general use, and planned residential development districts (refer to Map 24 on page 111). A land use survey was also conducted in conjunction with this plan (see Map 13, page 73). The data collected through this survey will be utilized to determine the acreage and number of properties that are currently vulnerable to a flooding hazard.

Tables 62 through 64 below present the vulnerability to both the property within each zoning district and the existing land use data to FEMA designated flood zones discussed on page 31 (see Map 3, page 33), as well as the Hurricane Storm Surge Inundation Model (SLOSH) developed by the Army Corps of Engineers (see Map 4, page 35). In 1986, the US Army Corps of Engineers prepared maps of coastal North Carolina that delineated the flooding which may be expected to occur as a result of hurricanes. The maps were prepared utilizing a computer-based model named SLOSH (Sea, Lake, Overland Surges From Hurricanes). The model plots hurricane-related flooding which may result from a number of characteristics including wind speed, wind direction, time, tide, etc. According to the National Hurricane Center, the SLOSH model is generally accurate within plus or minus 20 percent. The information below provides a summary of how vulnerable developed and undeveloped portions of the county are to potential coastal flooding that is associated with several of the storm events discussed earlier in this section.

Table 62  
Camden County  
Vulnerability in the 100-Year Floodplain

Land Use	Developed			Undeveloped		
	Parcels	Acreage	% of Total	Parcels	Acreage	% of Total
Agricultural/Open Space/Low Density Residential	0	0.00	0.00%	2,332	56,568.93	100.00%
Commercial	36	50.71	0.18%	0	0.00	0.00%
Industrial	3	1,161.59	4.21%	0	0.00	0.00%
Multi-Family	2	31.35	0.11%	0	0.00	0.00%
Office & Institutional	30	134.11	0.49%	0	0.00	0.00%
Residential	998	1,006.63	3.65%	0	0.00	0.00%
Recreational	10	25,220.23	91.36%	0	0.00	0.00%
Total	1,079	27,604.62	100.00%	2,332	56,568.93	100.00%

Source: Holland Consulting Planners, Inc.

Table 63  
Camden County  
Vulnerability in the 100-Year Floodplain - Zoning

Zone	Parcels	Acreages
CCD Community Core	63	139.94
GUD General Use	1,235	69,403.93
HC Highway Commercial	136	380.12
I-1 Light Industrial	42	1,054.82
PUD Planned Unit Development	4	51.91
MC Marine Commercial	65	378.08
NCD Neighborhood Commercial	6	3.42
R-1 Residential	47	109.82
R-2 Residential	650	2,587.89
R-3 Residential	1,209	9,441.74
Total	3,457	83,551.66

Source: Holland Consulting Planners, Inc.

Table 64  
Camden County  
Storm Surge Inundation

<b><u>Developed Land</u></b>						
Land Use	Category 1 & 2		Category 3		Category 4 & 5	
	Parcels	Acreage	Parcels	Acreage	Parcels	Acreage
Commercial	22	13.79	19	19.63	48	84.82
Industrial	1	1,087.25	3	75.11	3	217.45
Multi-Family	1	27.60	1	2.40	2	9.19
Office & Institutional	12	37.10	19	26.89	45	203.00
Residential	465	255.56	710	414.67	1,834	1,870.45
Recreational	9	1,652.68	5	444.99	5	232.93
Total	510	3,073.98	757	983.69	1,937	2,617.84

<b><u>Vacant Land</u></b>						
Land Use	Category 1 & 2		Category 3		Category 4 & 5	
	Parcels	Acreage	Parcels	Acreage	Parcels	Acreage
Agricultural/ Open Space/ Low Density Residential	1,383	30,024.00	1,520	12,731.40	2,318	60,073.21
Total	1,383	30,024.00	1,520	12,731.40	2,318	60,073.21

Source: Holland Consulting Planners, Inc.

The property broken down above with the associated hazards will require land use policies that control the type and distribution of land uses designed to minimize the potential damage from future hurricanes. At this time, Camden County has implemented provisions in its local zoning and subdivision ordinances and the flood damage prevention ordinance that are consistent with a policy of minimizing flood damage by controlling land use and assigning restrictive development standards to these high-risk environments.

## **2. Estuarine Shoreline AEC**

This hazard area extends only 75 feet landward of the mean high water line as defined by the Division of Coastal Management in areas adjacent to non-ORW waters, and 575 feet landward of the mean high water line in areas adjacent to ORW waters. However, the entire estuarine shoreline environment is subject to an extended hazard zone depending on low-lying topography, which is subject to varying degrees of flooding and wave action. The county's zoning and subdivision ordinances and flood damage prevention ordinance are consistent with development standards required for this area by DCM and the Federal Emergency Management Agency.

## **3. Non-AEC Areas**

All areas within the county are subject to some destructive aspect of hurricane damage through high winds, flooding, wave action, or erosion. If even a limited portion or percentage of the county were impacted from the effects of a major hurricane, the potential for damages in dollars can be significant. Implementation of mitigation of hurricane damage through proper land development policies and conformance with state building codes can be expected to result in a significant reduction in the extent and cost of loss of property and lives in the county when a major storm event strikes.

### **D. HAZARD MITIGATION POLICIES**

The following are Camden County's policies concerning hazard mitigation:

- Camden County will continue to support its storm hazard mitigation policies provided in the 1993 Camden County CAMA Land Use Plan.
- Camden County will continue to rely on its existing ordinances and land use controls to regulate development.
- The county will continue to actively pursue state and federal grant funds with respect to Hazard Mitigation to assist in the implementation of the recommendations included in this plan.
- Camden County will continue to encourage projects undertaken by the county's Law Enforcement, Fire, Public Works, and Inspections Departments that will lessen the vulnerability of the county and its residents to natural hazards. When projects are found to address hazard mitigation, the availability of state and federal grant funds that may assist the county with the cost should be investigated.

- The county will continue to stay current with all CRS reporting requirements to ensure continued program participation.
- The county will attempt to improve the its Community Rating System (CRS) classification, and consequently, lower flood insurance rates for residential, commercial, and institutional property.
- The county will advertise the availability of flood insurance on an annual basis.
- The county will develop a stormwater management ordinance.

#### E. HURRICANE EVACUATION PLANNING

Hurricane evacuation planning is addressed by the Camden County Emergency Operations Plan.

#### F. POST-DISASTER RECOVERY PLAN

Camden County operates under the jurisdiction of the Pasquotank County Emergency Operations Plan. Coordination and implementation of this plan falls completely under the control of the Pasquotank County Emergency Operations Center. A full copy of this document is available through the Camden County Manager's Office. A summary of Post-Disaster Reconstruction policies and procedures is outlined below. These policies support intergovernmental coordination between Camden County and Pasquotank County.

The county's Post-Disaster Reconstruction Plan is organized in the following sections:

- Introduction
- Organization of Local Damage Assessment Team
- Damage Assessment Procedures and Requirements
- Organization of Recovery Operations
- Recommended Reconstruction Policies

The following provides a summary of the plan's most important provisions and policies from each of these five sections.

## **1. Introduction**

Defines plan purpose and use; identifies three distinct reconstruction periods: Emergency, Restoration, and Replacement/Reconstruction. Outlines sequence of procedures to be followed to meet state and federal disaster relief regulations:

- (1) Assess storm damage and report to county.
- (2) County compiles and summarizes individual community reports.
- (3) State compiles county data and makes recommendation to the Governor.
- (4) Governor requests Presidential Declaration.
- (5) Federal Relief programs available.

## **2. Organization of Local Damage Assessment Team**

Outlines personnel available and sets up means for mayoral appointment of team.

## **3. Damage Assessment Procedures and Requirements**

The purpose of this phase is to rapidly determine immediately following a storm disaster: 1) number of structures damaged, 2) magnitude of damage by structure type, 3) estimated total dollar loss, and 4) estimated total dollar loss covered by insurance. To accomplish this, the plan established four categories of damage: 1) destroyed (repairs > 80% of value), 2) major (repairs > 30% of value), 3) minor (repairs < 30% of value), and 4) habitable (repairs < 15% of value). Any structure located in an AEC that is damaged more than 50% of its value is considered destroyed by CAMA permitting standards, and a new permit will be required for reconstruction of such structure.

Total damage in dollars is estimated by taking the tax valuation times a factor to make prices current, then factoring these figures according to number of structures in each of the above damage classifications. Estimated insurance coverage is made by utilizing information as to average coverage obtained by insurance agencies on an annual basis.

## **4. Organization of Recovery Operations**

The Mayor and Board of Commissioners assume the duties of a Recovery Task Force. The Task Force must accomplish the following:

- Establish re-entry procedures.



- Establish overall restoration scheme.
- Set restoration priorities.
- Determine requirements for outside assistance and requesting such assistance when beyond local capabilities.
- Keep appropriate county and state officials informed using Situation and Damage Reports.
- Keep the public informed.
- Assemble and maintain record of actions taken and expenditures and obligations incurred.
- Proclaim a local “state of emergency” if warranted.
- Commence clean-up, debris removal, and utility restoration activities undertaken by private utility companies.
- Undertake repair and restoration of essential public facilities and services in accordance with priorities developed through situation evaluations.
- Assist individual property owners in obtaining information on the various types of assistance that might be available from federal and state agencies.

G. RECOMMENDED RECONSTRUCTION POLICIES

All of the following policies have been designed to be 1) considered and adopted by the County Manager and County Commissioners of Camden County prior to a storm, and 2) implemented, as appropriate, after a storm occurs:

1. **Bridge Re-entry Permits**

- Re-entry permits will be required to pass through roadblocks assuming a full evacuation was issued prior to the storm event. These permits must be applied for at the County Administrative Building prior to evacuation. County officials, law enforcement, fire, emergency medical, and emergency management organization personnel will be issued special permits for early re-entry to inspect the county for safe public re-entry. Camden

County residents and others who are authorized to return after the island has officially been declared safe for re-entry may apply for the re-entry permits. Others must remain outside the county until conditions are stabilized and normal traffic can be resumed.

- Camden County residents will be issued re-entry permits on the basis of one per family. Two permits may be issued in exceptional cases. Applicants must show proof of residency.
- Short-term renters (vacationers) will not be issued permits. Personal property tax records will be checked for proof of residency upon application.
- Re-entry permits will only be issued upon personal application at the county administrative building during normal duty hours.
- Non-resident owners of improved properties (not vacant lots) may be issued permits on the basis of one per owner. They may apply in writing showing the address of the property for a tax record check.
- Owners and managers of businesses may apply for re-entry permits for themselves and employees who are required before normal traffic is resumed. The manager, or his representative, must submit a written application listing the number of re-entry permits required and the position of each person who will receive one. These permits must be retained under the control of the manager for issue before the storm strikes.

## **2. Permitting**

- Building permits to restore structures located outside of designated AEC areas that were previously built in conformance with local codes, standards, and the provisions of the North Carolina Building Code shall be issued automatically.
- All structures suffering major damages as defined in the county's Damage Assessment Plan (outlined in the Pasquotank County EOP) shall be repaired or rebuilt to conform to the provisions of the CAMA regulations (including setbacks), North Carolina Building Code, the Camden County Code, and the Camden County Floodplain Management Regulations.
- All conforming structures suffering minor damage as defined in the Camden County Damage Assessment Plan shall be permitted to be rebuilt to their original state before the storm condition.

- For all structures in designated AECs, a determination shall be made for each AEC as to whether the provisions of the CAMA regulations (including setbacks), NC Building Code, the state regulations for Areas of Environmental Concern, and the Camden County Floodplain Management Regulations appeared adequate in minimizing storm damages. For areas where the construction and use requirements appear adequate, permits shall be issued in accordance with permitting policies listed above. For AECs where the construction and use requirements do not appear to have been adequate in mitigating damages, a Temporary Development Moratorium for all structures located within that specific AEC should be imposed.
- Permits shall not be issued in areas subject to a temporary development moratorium until such a moratorium is lifted by the Camden County Board of Commissioners.

### **3. Utility and Facility Reconstruction**

- The county will repair all damaged water system components so as to be elevated above the 100-year floodplain or shall be floodproofed, with the methods employed and the construction being certified by a registered professional engineer.
- The potable water supply will be turned off in the event of evacuation.

### **4. Temporary Development Moratorium**

Under certain circumstances, interim development moratoriums can be used in order to give a local government time to assess damages, to make sound decisions, and to learn from its storm experiences. Such a moratorium must be temporary and it must be reasonably related to the public health, safety, and welfare.

Camden County will suffer heavy and serious damages should a major storm make landfall in its vicinity. Consequently, the county should be prepared to issue temporary development moratoriums as appropriate.

It is not possible to determine prior to a storm whether a temporary development moratorium will be needed. Such a measure should only be used if damage in a particular area is very serious and if redevelopment of the area in the same manner as previously existed would submit the residents of the area to similar public health and safety problems. In Camden County, such a situation is most likely to occur in one or more of the AECs.

The Camden County policy regarding the proclamation of temporary development moratoriums shall be:

- To determine for each AEC whether the provisions of the NC Building Code, the state guidelines for AECs, and the Camden County Flood Damage Prevention Ordinance appeared adequate in minimizing storm damages. For AECs where the construction and use requirements do not appear adequate, a temporary development moratorium for all structures located within that specific AEC shall be imposed.
- After imposing a temporary development moratorium for an AEC, the county shall request that the Coastal Resources Commission conduct a special analysis for the county and all other similar communities in order to determine how local regulations for those hazard areas, which are based on state and/or federal guidelines or requirements, should be improved or modified. A response from the state within a reasonable time period as determined through negotiations should be requested.
- The temporary building moratorium in all AECs shall be lifted after local ordinances and regulations have been revised based on state recommendations or decisions of the County Manager and Board of Commissioners. Reconstruction shall be permitted in accordance with existing regulations and requirements.